ANALYSIS OF ENGINEERING RETENTION PROGRAMS

AND

THEIR IMPACT ON ORGANIZATIONAL DYNAMICS

by

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## ABSTRACT

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Submitted to the Alfred P. Sloan School of Management on May 3, 1976 in partial fulfillment of the requirement for the degree of Master of Science.

The problem studied is the impact of retention systems application on engineering personnel, organizationally and personally. Each of three organizations (communications and aerospace industry companies and a government agency) provided 100-man engineering data samples, and the problem was addressed in two phases. Phase One employed a simulated 25% personnel layoff to exercise each of the three retention systems against each of the three engineering data bases in turn to evaluate the demographics and the "quality" of the retained and the laid off workforces. Conclusions regarding demographic trends and the implication of different selection criteria priorities were made. Phase Two employed a questionnaire to sample the engineers' (and their managers') perceptions with regard to the fairness and efficiency of their systems. Three 40-respondent samples were obtained, and between 14 and 17 first- through fourth-level managers were interviewed. Answers were computor filed and evaluated statistically (using SPSS) for the less-mechanical, "induced effects" of retrenchment. Industry and government engineers differ in present retention system appreciation, but generally desire the same ideal system.

| | |
|---|---|
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# CHAPTER 1

# INTRODUCTION

## A. Statement of the Problem

The products and services generated by the American economy grow more complex and sophisticated with time. This fact tends to highlight certain facets of our productive capacity as more critical now than in the past. One such productive factor that is playing an ever increasing role in our society is the engineering profession. The technological revolution in the past twenty-five years has been unparalleled in history. As a consequence, the proportion of the labor force represented by technical and professional employees has been growing over many decades.

With the role of the engineer expanding in our society it is more important than ever to investigate the operational aspects of engineering in various public and private organizations. This thesis will analyze one area of interest; namely engineering retention programs and how they impact on organizational dynamics.

Almost all corporations and governmental agencies, from time to time, face the necessity to reduce their total work forces for a variety of reasons such as decreased sales levels, cancellations or modifications of contracts, reductions in appropriations, and curtailment or deletion of programs. Very often engineering staffs must be retrenched in keeping with the general force reduction. The general policies and methodology used to accomplish this reduction can have a variety of impacts on the organization involved. As an example, what are the short, intermediate, and long term effects of a retention system that tends to discriminate against low-seniority engineers who coincidentally have the most recent degrees? It is well known that the "half-life" of technical education is becoming shorter with time. Is there a counter-balance to this in the experience factor of the more senior engineer? Another issue to explore might be how well the retention system is understood by the engineer and supervision in general. How are productivity, morale, decisions to resign, etc. impacted on by a particular retention system?

The engineering function is a vital asset to the organization which it supports. Ideal retention systems, fairly applied, can only hope to maintain the status quo while less-than-ideal systems, applied in less than an optimum manner, will reduce the engineering asset to some new value. This, of course, will affect the overall effectiveness of the corporation or government agency involved.

In order to address this problem, the authors have chosen three retention systems from the Communications (COMMOG) and Aerospace (AEROG) Industries and a Government Agency (GOVTG) for analysis and comparison. All of them have been or are in a retrenchment environment. Both the "mechanical" aspect of the personnel selection process, and the less measurable, but equally important perceived impact of the retrenchment on the organizational dynamics will be addressed. Typical points of evaluation will include transient disruption, motivational and productivity impacts, communications effectiveness, and equity perceptions.

B. Methods of Analysis

1. General

The analysis and comparison of the three sample sources from the aerospace and communications industries, and a government agency (AEROG, COMMOG, and GOVTG, respectively) professional retention systems involve two distinct and separate phases. Phase One addresses the mechnical implementation of the retention systems' procedures against actual 100-engineer data samples obtained from each of the three sources. A simulated 25% reduction in personnel is performed on each data sample using each retention system in turn. The outcomes (i.e. changes to the demographics and the "quality" of the remaining force, as well as categorization of those laid off) are compared and correlated for regularities, irregularities, and the reasons for each. The second phase involves the interrogation of engineers and management through questionnaires and/or personal interviews to determine their perceptions of retention systems. Three additional groups of 40 engineers were obtained from the same sources, and following a prebriefing, they were asked to complete a questionnaire. Opinions of management from each of the three sources (first through fourth level) were obtained using the questionnaire as the basis for a structured interview. (The Government managers, unlike Industry are retained under the same system as their engineers, so they were asked to answer the questionnaire from <u>their</u> standpoint. Industry managers were asked to respond with their opinion of the engineer's attitudes. The 54-question document (a copy of which is included in Appendix A) attempted to elicit each respondent's perception of his retention system with regard to such topics as equity, retention system efficacy, morale and productivity impact, communications effectiveness during retrenchment, and induced effects such as early retirement, transfers and quitting.

2. Phase One Methodology

A sample of 100 engineers was selected from each of the three participating organizations. The samples were randomly selected with the aid of the local personnel departments resident in the COMMOG, AEROG, and GOVTG locations covered by the study. In general the data obtained and compiled on each engineer were: age, race, sex, veteran status, service date, salary history, present and (where available) past technical classification or GS Series (e.g. semiconductor engineer or mechanical engineering) performance rank, and technical grade level (e.g. occupational engineer, senior engineer, GS-13, GS-14, etc.).

a. Each data base was reduced to the same format in order to facilitate the conduct of a simulated reduction-in-force (RIF) of 25%.

b. Where reductions are accomplished through the process of abolishing functions and missions (and therefore specific jobs, such as in the government), the selection process was to list the data base by seniority, number the jobs consecutively, select 25 random numbers, and abolish the corresponding jobs.

c. The three retention systems (described in paragraph D of this Chapter) were followed in selecting the 75 engineers to be retained in each organization. First, each data base was run against the retention criteria of its own retention system. Then the data bases were each run against the other two systems. The intent of the analyses is to evaluate the relative "strength" of the workforce after the adverse action. Practically, it is simpler to consider the relative quality of the workforce being laid off and the number of job changes and grade or pay drops encountered in the personnel reduction. Since the retention criteria and their priorities differ markedly between the three groups, an evaluation of the three data bases through a particular system when compared with another will demonstrate the effect of these differences. It is also hoped that a detailed example of the operation of these systems will help dispel some of the misinformation surrounding personnel reductions. It is unfortunate that it was impossible to complete the tasks because on non-availability of accurate data. The communications and aerospace industries determine retention through an overall performance rating. The government, which uses seniority and veteran's preference, tempered by performance awards, does not collect sufficiently accurate data on its employees to be useful in the two cases where the government agency data base would be reduced by the communications or aerospace systems (specifically, it was impossible to construct a performance based rank order listing of the 100 GOVTG engineers). Therefore, the cases covered are as follows:

| Retention System / Data Base | Communications (COMMOG) | Aerospace (AEROG) | Government (GOVTG) |
|---|---|---|---|
| Communications | x | x | x |
| Aerospace | x | x | x |
| Government | Not attempted | Not attempted | x |

3. Phase Two Methodology

Phase 2 in the analysis and comparison of the three retention systems was to "probe," through representative samples, both the engineering and management at the COMMOG, AEROG, and GOVTG locations used in the study. The purpose of the engineer questionnaire was to capture his perceptions of his retention system regarding such factors as equity, performance appraisal accuracy, job security, retention criteria and priority balance of organizational/personnel objectives, and a variety of other issues. The management interviews were needed to compare their perceptions to those of the engineers so that issues such as communications and organizational dynamics, as they relate to engineer retention, could be analyzed.

A questionnaire was developed for use in the analysis of both the engineering and the managerial universes. The document consisted of 54 questions dealing with the issues listed above. A copy of the questionnaire, annotated with the variables and responses is included as Appendix A.

Because of severe time constraints, the questionnaire could only be pre-tested on a small sample of Sloan Fellows. This test group had no apparent difficulty in understanding and completing the document. However, in order to insure a high level of understanding, the decision was made to hand carry the questionnaire to the various test locations and to personally meet with the engineers in the respective samples and to interview their managers.

During the week of January 5, 1976, field trips were made with each of the authors visiting one of the questionnaire and interview locations. Prior to the visit it was decided to use only the questionnaires in analyzing the engineers but to use personal interview techniques with the managers, employing the questionnaire as a point of focus during the interview.

Early in the week, a sample of 40 professional engineers were selected through the personnel departments at each location. The purpose of the study, the authors' association with the Sloan Program, and a brief explanation of the questionnaire were discussed with each of the 40 engineers either individually or in a group. It was stressed, both in the questionnaire cover letter and orally, that participation was completely voluntary and that the whole exercise was to be done anonymously. A conscious effort was made not to bias the engineers during these explanatory meetings. No specific questions within the body of the document were discussed. By the end of the week, a 100 percent return of questionnaires was achieved at all three locations.

During the week, as the engineers were completing their questionnaires, personal interviews with management were scheduled and held. Four vertical levels of management were involved at each location, with the largest sample being taken at the level immediately adjacent to the engineer. Smaller samples were taken by moving vertically upward, in a pyramidal fashion. The management sample sizes taken at COMMOG, AEROG and GOVTG were 17, 14 and 15 respectively.

At COMMOG, each manager was asked to fill out the questionnaire prior to the meeting on the basis of how he perceived the engineers would complete it. This completed coument then became the focal point of the interview. The GOVTG management staff was asked to respond orally to each question during the interview. However, they were answering the questions as they applied to themselves, since in the government the retention system is identical for both the engineer and the manager. Conversely, COMMOG and AEROG management retention systems bear less resemblance to the ones used for engineers. Finally, at AEROG, the questionnaire was not completed by management but was used extensively in the personal interviews.

4. Computer Use

The answers collected via questionnaire were reduced to numerical data, compiled on work sheets, and keypunched on IBM cards. The completed data deck, along with the necessary data definition cards (e.g. variables list and values list) was filed in a batch system memory for use with SPSS. The Statistical Package for the Social Sciences (SPSS) is an integrated system of computer programs designed to allow the user a simple, convenient method of performing a large number of statistical routines commonly used in the Social Sciences.[1] The data format was installed in subfile form wherein each 40 engineer sample was listed as a separate subfile, as was the government management sample; COMMOG, AEROG, GOVTG, and GOMGT, respectively. This allowed flexibility in investigating phenomena in the composite, by source (individual organization), or by industry versus government. The basic statistical tools employed in this investigation included frequency of answer compilation along with measures of central tendency and dispersion, crosstabulation of related data, and multiple regression of variables thought to be predicators of a given dependent variable.

C. The Data Base

1. General

The data analyzed in this thesis was obtained from multiple sources. Personnel profiles and questionnaire perceptions were obtained from

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[1] Norman Nie, et al., Statistical Package for the Social Sciences, 2nd Edition, McGraw-Hill Book Company, New York, 1975.

representative samples of engineers in three diverse industry and government groups: the communications industry, the aerospace industry, and a governmental agency. From each source two sets of data samples were obtained:

a. A 100 - engineer sample with sufficient information to enable a simulated reduction in force to be run with the three subject retention systems.

b. A 40-engineer sample from the same populations (although not necessarily the same engineers) to which the questionnaire was administered.

2. Phase One Study Data

Each organization that supported this thesis (COMMOG, AEROG, and GOVTG) was kind enough to provide sufficient data on the 100-engineer samples that we could determine such things as age, sex, minority status, veteran status, years of experience, educational status and salary for each engineer in the sample.

The associated data for each of the 300 engineers involved in Phase 1 can be found in the appendices as Tables B-1, C-1 and D-1 which are respectively the COMMOG, AEROG, and GOVTG employees. The data have been depersonalized to the extent that employee numbers (devised by the authors) are used to denote each individual rather than names. These data have been aggregated and re-formatted in order that they can be presented by participating organization and/or the sum of all organizations (i.e. composite data). Tabular summaries of these data are presented below in a comparative format to both aid the reader in assessing the results of this study and to enable the reader to extrapolate the results and conclusions into his own organizations' setting.

a. Age

The age distribution of the three engineering samples differ considerably. Figure 1 illustrates that the communications industry sample is heavily weighted toward the younger engineer, the aerospace industry has a much more marked peak at the 50-55 range and a considerably higher mean age of 47.1 years, and the government agency sample is more normally distributed, but with the largest average age (48.2 years). The composite of the three is skewed slightly toward the older age groups but the mean is 45 years.

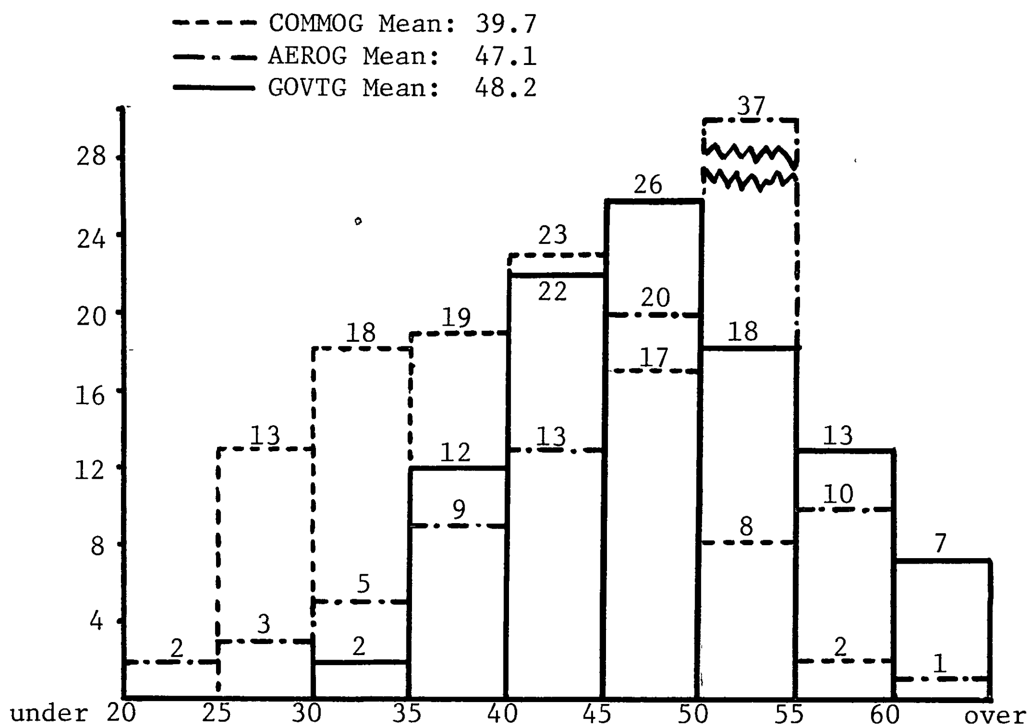
b. Sex and Minority Status

Of the composite sample (100 in each industry or government group), all were males and 6 were members of a racial minority group.

c. Veteran Status

The composite sample contained no disabled veterans, 191 veterans, and 109 non-veterans distributed as follows:

| | Disabled Veterans | Veterans | Non-Veterans | % Non-Veterans |
|---|---|---|---|---|
| COMMOG | 0 | 49 | 51 | 51 |
| AEROG | 0 | 67 | 33 | 33 |
| GOVTG | 0 | 75 | 25 | 25 |
| Composite | 0 | 191 | 109 | 36 |



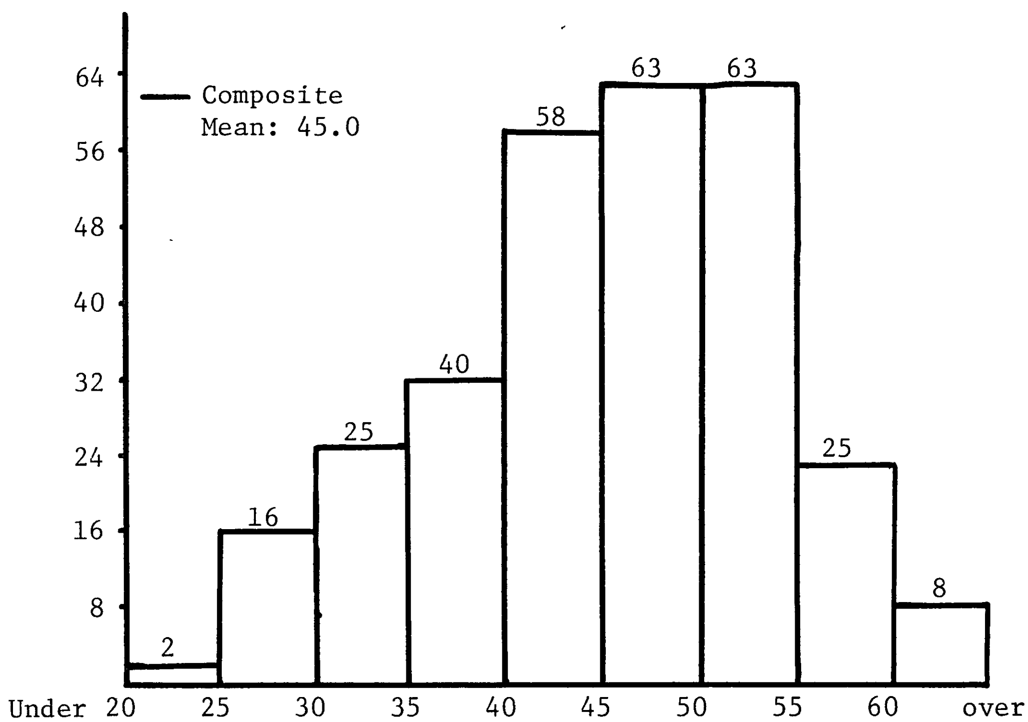




FIGURE 1 AGE DISTRIBUTIONS FOR COMMOG, AEROG, GOVTG EXAMPLE REDUCTION IN FORCE.

d. Career Experience

The number of years experience in Industry and Government, respectively, are summarized as follows:

| | Mean | Mode | Median |
|---|---|---|---|
| COMMOG (yrs in industry) | 12.3 | 6.0 | 10.5 |
| AEROG (yrs in industry) | 17.8 | 17.3 | 18.0 |
| GOVTG (yrs in government) | 21.6 | 19.0 | 21.0 |

e. Education

(1) The number of engineers in each group who did not receive a college degree were:

| | Number | Percent of Sample |
|---|---|---|
| COMMOG | 12 | 12% |
| AEROG | 17 | 17% |
| GOVTG | 4 | 4% |
| Composite | 33 | 11% |

(2) The number of engineers who received an undergraduate degree with the mean year obtained were:

| | Number | Percent of Sample | Mean Year |
|---|---|---|---|
| COMMOG | 59 | 59 | 1962 |
| AEROG | 73 | 73 | 1956 |
| GOVTG | 94 | 94 | 1954 |
| Composite | 226 | 75.3% | |

(3) The number of engineers who received advanced degrees with the mean year obtained were:

| | Number | Percent of Sample | Mean Year |
|---|---|---|---|
| COMMOG | 29 | 29 | 1969 |
| AEROG | 10 | 10 | 1963 |
| GOVTG | 2 | 2 | 1968 |
| Composite | 41 | 13.7% | |

f. Average Level (Salary or GS)

The mean salary (for Industry) and GS Level (for Government) are:

| | Per. Annum |
|---|---|
| COMMOG | $19,244 |
| AEROG | 22,166 |
| GOVTG | GS-13+* |

*Salary range of GS-13s is $22,906 to $29,782.

3. Phase Two Study Data

In all, 120 engineers (40 each from COMMOG, AEROG, and GOVTG) completed the thesis questionnaire. Their responses form the basis for Phase 2 of the thesis wherein we will analyze the perceptions and attitudes engineers have with respect to retention systems. Items 1 through 13 of the questionnaire dealt with demographic information that was needed in order to sub-categorize the respondents, i.e. by age, experience, educational background, etc. These demographic data for each of the three groups of 40 engineers can be found in the appendices as Tables E-1, F-1 and G-1 which relate respectively to GOVTG, COMMOG, and AEROG.

As with the Phase 1 data (the three groups of 100 engineers) we have summarized the Phase 2 related data in order to facilitate comparisons of age, sex, minority status, veteran status, years of experience, educational status and salary between the three groups and for the composite sample. Once again, it is our hope that the reader may be able to compare these statistics with the comparable data from his own organization and in this fashion decide on the appropriateness of our results and conclusions as they might apply in his situation.

a. Age

The age distributions of the three engineer sample differs considerably (Figure 2 shows through multiple plots both the individual agency and composite age distribution). The Government agency sample of 40, for example, is skewed to the older age groups. The Communications engineering sample is, on the other hand, skewed toward the younger age groups and the Aerospace group is predominately near middle age with nearly symmetric, but small, distributions of younger and older individuals. All three organizational distributions (COMMOG, AEROG, and GOVTG) peak in the 40-45 year age group. For this reason, in a number of the analyses where age difference might be a variant, the ten 5-year categories of age were restructured to include three nearly-equal size groups--younger, mid-aged, and

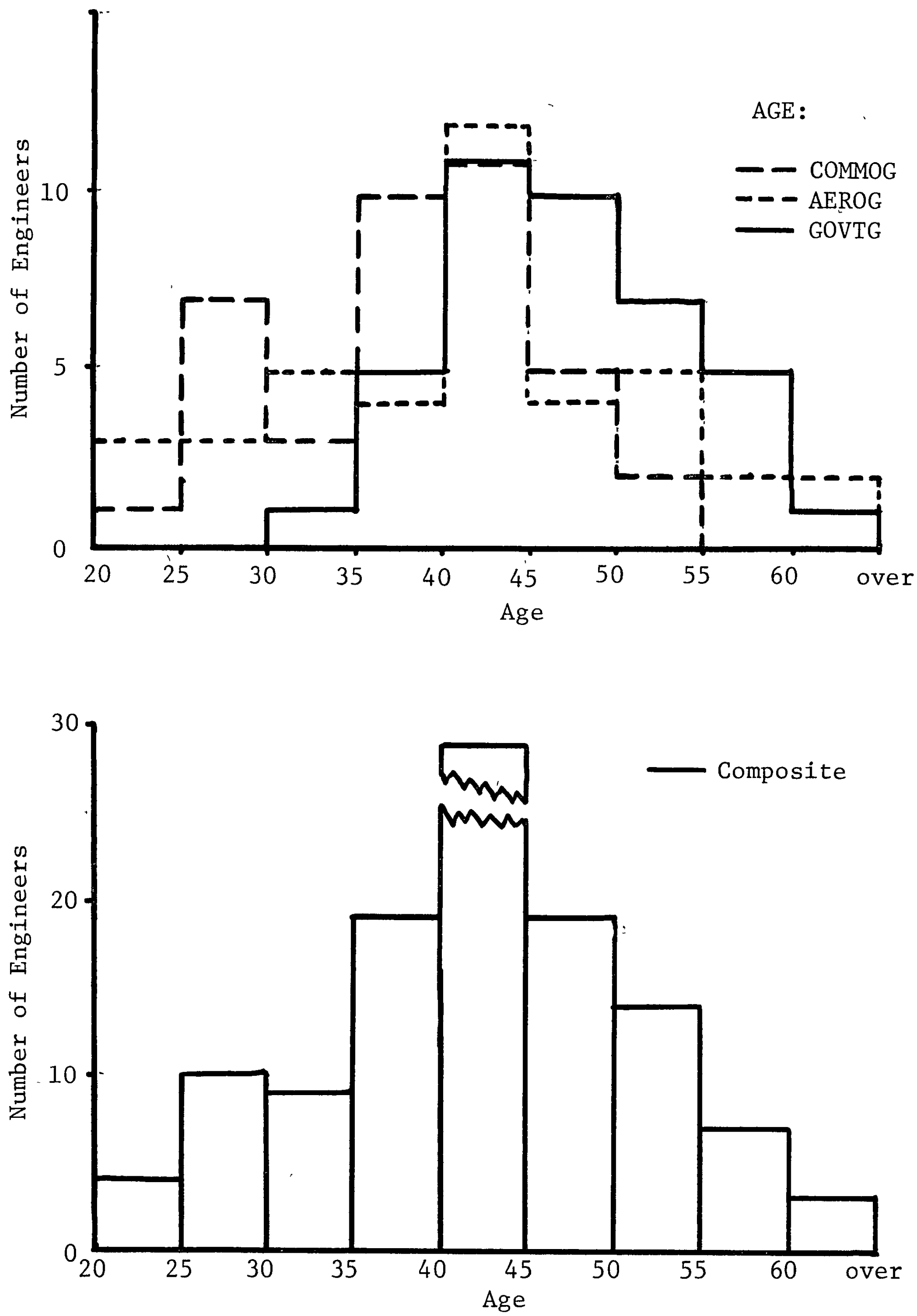



FIGURE 2 AGE DISTRIBUTIONS FOR COMMOG, AEROG AND GOVTG QUESTIONNAIRE RESPONDENTS

older (20 to 40, 40 to 45, and 45 to over 60, respectively).

b. Sex and Minority Status

Of the 120 engineers in the composite group (40 in each industry or government group), all were males and 3 were members of a minority group.

c. Veteran Status

The composite sample contained 3 disabled veterans, 83 veterans and 34 non-veterans distributed as follows:

| | Disabled Veterans | Veterans | Non-Veterans | % Non-Veterans |
|---|---|---|---|---|
| COMMOG | 0 | 25 | 15 | 37.5 |
| AEROG | 2 | 25 | 13 | 32.5 |
| GOVTG | 1 | 33 | 6 | 17.6* |
| Composite | 3 | 83 | 34 | |

*The lower percentage non-veterans in Government reflects the retention policy of giving preferance to veterans.

d. Career Experience

(1) The number of years experience in Industry (i.e. non-government employment) are summarized as:

| | Mean | Mode | Median |
|---|---|---|---|
| COMMOG | 13.3 | 15.0 | 14.2 |
| AEROG | 15.4 | 2.0 | 16.5 |
| GOVTG | 2.7 | 0 | 0.3 |

(2) The number of years experience in government employment are summarized below:

| | Mean | Mode | Median |
|---|---|---|---|
| COMMOG | 0 | 0 | 0 |
| AEROG | nil | 0 | nil |
| GOVTG | 17.5 | 15.0 | 16.5 |

e. Education

(1) The year in which high school diploma was obtained:

| | Mean | Mode | Median |
|---|---|---|---|
| COMMOG | 1954 | 1956 | 1953 |
| AEROG | 1948 | 1950 | 1949 |
| GOVTG | 1946 | 1944 | 1947 |

(2) The engineers' college education is reflected by the following:

| | College Degree | None | % With Degree |
|---|---|---|---|
| COMMOG | 33 | 7 | 82.5 |
| AEROG | 35 | 5 | 87.5 |
| GOVTG | 38 | 2 | 95.0 |
| Composite | 106 | 14 | 88.3 |

(3) The year in which the college degree was obtained:

| | Mean | Mode | Median |
|---|---|---|---|
| COMMOG | 1961 | - | 1959 |
| AEROG | 1953 | - | 1959 |
| GOVTG | 1951 | 1950 | 1955 |

(4) The most prevalent college majors were:

| Rank | Major | Composite Number Majored | COMMOG | AEROG | GOVTG |
|---|---|---|---|---|---|
| 1. | Electrical Engineer | 31 | 8 | 12 | 11 |
| 2. | Mechanical Engineer | 24 | 7 | 9 | 8 |
| 3. | Mathematics | 8 | 2 | 2 | 4 |
| 4. | Physics | 8 | 2 | 3 | 3 |
| 5. | Industrial Engineer | 6 | 5 | - | 1 |
| 6. | Multiple Degree | 4 | 1 | 3 | - |

(5) Number of engineers with graduate school experience:

| | Attended | % of Total |
|---|---|---|
| COMMOG | 19 | 47.5 |
| AEROG | 12 | 30.0 |
| GOVTG | 20 | 50.0 |
| Composite | 51 | 42.5 |

(6) Of those attending, the percent who completed their degree was:

| | % Degree |
|---|---|
| COMMOG | 42.5 |
| AEROG | 20.0 |
| GOVTG | 20.0 |
| Composite | 27.5 |

(7) The mean year in which the graduate degrees were obtained:

| | |
|---|---|
| COMMOG | 1971 |
| AEROG | 1971 |
| GOVTG | 1963 |
| Composite | 1969 |

f. Responsibility and Expertise

(1) The most prevalent occupational classifications are:

| | Com- posite | COMMOG | AEROG | GOVT |
|---|---|---|---|---|
| Occupational Engineer | 34 | 30 | 2 | 2 |
| Senior Engineer | 28 | - | 10 | 18 |
| Lead Engineer | 22 | 6 | 10 | 6 |
| Staff Engineer | 17 | 1 | 11 | 5 |
| Technical Specialist | 14 | 2 | 6 | 6 |

(2) Based on their job title and primary, secondary, and tertiary expertise the number of engineers who were ranked as generalists or specialists are:

| | Generalist | Specialist | % Generalists |
|---|---|---|---|
| COMMOG | 9 | 31 | 22.5 |
| AEROG | 15 | 24 | 40.0 |
| GOVTG | 22 | 18 | 55.0 |
| Composite | 46 | 73 | 39.2 |

(3) Expertise was determined in primary, secondary, and tertiary classifications:

| | Composite | COMMOG | AEROG | GOVTG |
|---|---|---|---|---|
| Primary | | | | |
| Test | 32 | - | 26 | 6 |
| Production | 19 | 17 | - | 2 |
| Pgm/Proj. Mgt. | 18 | - | 1 | 17 |
| Engineering Design | 17 | 7 | 6 | 4 |
| Development | 7 | 1 | 2 | 4 |
| Support Services | 11 | 10 | - | 1 |
| Secondary | | | | |
| Engineering Design | 24 | 6 | 10 | 8 |
| Test | 19 | 6 | 6 | 7 |
| Development | 14 | 3 | 5 | 6 |
| Scientific Research | 6 | 1 | 2 | 3 |
| Production | 5 | 3 | - | 2 |
| Plant and Engineering | 5 | 3 | 1 | 1 |
| Pgm/Proj. Mgt. | 5 | - | 1 | 4 |
| Tertiary | | | | |
| Engineering Design | 14 | 2 | 3 | 9 |
| Development | 14 | 7 | 3 | 4 |
| Scientific Research | 11 | 2 | 2 | 7 |
| Pgm/Proj. Mgt. | 4 | - | - | 4 |
| Plant and Engineering | 4 | 2 | 1 | 1 |
| Configuration Mgt. | 3 | 1 | 1 | 1 |
| Production | 3 | - | 1 | 2 |

g. Career Goals

Each engineer was asked to rank order those career goals he espoused. Table 1 reflects the rankings seen by each industry or government subgroup and of the composite. The composite rank order was obtained using a linear weighting technique. There is an expected degree of match between the rankings of the two industry groups, emphasizing income, meaningful contribution, technical competence, and job security. The government sample differs in that income has less priority than contribution and competence. This probably derives from government engineers' relative inability to influence their incomes (step raises and cost-of-living increases, for example, are routine). Management competence appears higher in government engineers' priorities because of the generalist, program and project management nature of their jobs. Aerospaces' emphasis on job security over that of the other groups is postulated to be the result of long-term, highly-visible, and continuing cutbacks in that industry.

4. Management Data Base

a. General

In each of the three source agencies, interviews were conducted with industry or government managers from first to at least fourth levels (line manager to plant manager or deputy commander). Seventeen, fourteen, and fifteen managers were polled in COMMOG, AEROG, and GOVTG, respectively. In the two industry cases, the management perceptions of their retention system was taken on a general basis. (In both

TABLE 1

CAREER GOALS BY PRIORITY

| Priority | Composite | Communications | Aerospace | Government |
|---|---|---|---|---|
| 1. | Improved Income | Improved Income | Improved Income | Meaningful Contribution |
| 2. | Meaningful Contribution | Technical Competence | Meaningful Contribution | Technical Competence |
| 3. | Technical Competence | Meaningful Contribution | Job Security | Improved Income |
| 4. | Job Security | Job Security | Technical Competence | Job Security |
| 5. | Creativity | Creativity | Creativity | Management Competence |
| 6. | Management Competence | Personal Autonomy | Management Competence | Creativity |
| 7. | Personal Autonomy | Management Competence | Personal Autonomy | Personal Autonomy |
| 8. | Prestige | Prestige | Prestige | Prestige |
| 9. | Exercise of Power | Exercise of Power | Exercise of Power | Exercise of Power |
| 10. | Other | Other | Other | -- |

cases the management is not evaluated for retention by the same system as the engineers.) In the government agency case, however, since manager and engineer are retained under the same rules and procedures, the questionnaire was used somewhat formally to structure the interviews. Generally the management data was considered important to evaluate the differences in perception which might come with increased responsibility for employees in the retention system(s).

b. GOVTG Managers

The fifteen, first-through-fourth-level, managers questioned in this study answered the same questions as the engineers. Demographics for these managers who responded to the questionnaire is summarized in Table G-1 of Appendix G. They were all male, no minority group members and their top six career goals by priority were:

Management Competence

Meaningful Contribution

Technical Competence

Improved Income

Job Security

Creativity

The major difference is emphasis on management competence; otherwise government engineers and managers share common career goals.

c. COMMOG Managers

The management structure at the COMMOG manufacturing locations selected for this study consisted of six vertical levels. The title designations starting with the lowest were Section Chief, Department

Chief, Assistant Manager, Manager, Director and finally Works Manager. The first level in engineering supervision was Department Chief. Therefore, for the purpose of this study, the Department Chief is considered to be first level and all ascending levels have been re-numbered accordingly.

On the above basis, the first four vertical levels of engineering supervision were interviewed. The sample consisted of 11 Department Chiefs, 4 Assistant Managers, 1 Manager and 1 Director.

Since the retention system applied to COMMOG management is different than the one applied to COMMOG engineers, the management analysis in this case is used only to match perceptions between the supervisory staff and the engineers. No attempt was made to perform an in-depth SPSS analysis of questionnaires completed by this management group. Further, COMMOG managers (unlike GOVTG managers) were not asked to provide a rank ordered listing of their career goals.

d. AEROG Managers

A total of fourteen (14) AEROG managers were interviewed orally following the same general outline as that depicted in the questionnaire completed by the sample of 40 AEROG engineers. Interviews were conducted with both engineering managers and personnel managers and each field included four levels of managers starting with first-level supervisors and working up the chain of responsibility. Some managers elected not to answer every question (usually because they doubted their personal qualifications in a specific area) in these instances such answers were counted as "non-answer" and the denominator of the sample was adjusted downward in the appropriate fashion this was done on a question-by-question basis.

The age range of the AEROG managers was from 34 to 61 with an average of 46.6; the comparable range from AEROG engineers was 23 to 61 with an average of 46.9. With the exception of the fact that the managers evidenced a higher degree of familiarity with the AEROG retention system than did the surveyed engineers; in virtually all other areas of questioning their views were essentially identical to those of the engineering work force.

AEROG managers were very willing to participate in the interview and were quite candid in their responses and comments. Almost to a man the managers indicated a high degree of interest in the subject of the interview and indicated a willingness to try any suggestion that might improve the equity of the retention system; additionally, there was no outward evidence of <u>any</u> manager answering questions based on Theory X assumptions relative to the behavior of the AEROG engineering work force!

## D. <u>Retention System Descriptions</u>

### 1. COMMOG Retention System

The written corporate retention policy guide to be used for force reductions in the technical-professional area is concise. It stipulates that, during periods of force reduction, those employees with proven competence shall be retained whenever possible. In order that this might be accomplished, all organizations throughout the corporation are consulted with regard to surplus professional engineers and suitable transfer arrangements are made when possible and desirable. During a force reduction, engineers are to be selected for separation on the basis of ability, performance, term of employment and the needs of the business. When two employees are judged to be substantially equal with respect to all other qualifications, term of employment or time in level, depending on local option will be controlling. If a candidate for separation had received his professional engineering status via a promotion from the COMMOG engineering associate level (lower level support personnel in the professional universe) he will be downgraded to that level rather than being laid off. A candidate who entered the corporation as an engineer will be laid off.

The interpretations and application of this policy guide, to a large extent, is left up to the various factory, service, and headquarters locations positioned throughout the United States.

In a typical corporate location, there may be two or three engineering branches, each containing about 60 professionals and an equal amount of technical support personnel. Each branch is responsible for a particular area such as plant and factory, product types A, product types B, etc.

The need for a technical force reduction is generated by a decrease in business volume. Annual budgets for the various engineering functions are established on a projected sales volume basis. When actual volume matches budget, "recoveries," through a standard cost system, match "expenses" and the system is in equilibrium. When sales drop, expenses are "under-recovered" and, of course, losses start to occur. This is the point where force reduction plans are made and implemented.

As a general rule, heavier engineering cuts are made in those branches whose business level (and thus recoveries) falls the greatest. Some judgment is used so that the engineering support level for a given operation is not reduced below a critical minimum level. Also, if the reduction in a given branch is so severe that some of the professionals to be laid off/downgraded are clearly higher in performance and technical competence than those being retained in another branch, the Branch Manager of that branch may opt to lay off/ downgrade one of his personnel and receive, on a transfer, the more desirable engineer.

An annual performance appraisal of all engineers is made at every corporate location. The appraisal is made by all of the technical department heads at that location on a multi-supervisory basis. Each department head who has some knowledge of a professional's work within the past 12 months is entitled to influence the rating of that person. The immediate supervisor is given the highest weighting in the multi-supervisory analysis. The output of the analysis is a gross score for each professional and thus the system provides the ability to rank order the total engineering universe on a performance basis. After some reconciliation, the top 25% of the rank-ordered universe is given an outstanding rating and approximately the bottom 5% is identified as marginal, the balance being rated good. This performance rating plays a vital role in the COMMOG Retention System.

When a corporate location is forced to reduce its technical professional personnel, the first determination is a by-branch allocation based on the above presented guidelines. Once an engineering branch is given its allocation, an in-depth review of the technical demand for the area of responsibility is made looking for consolidation points, areas of possible responsibility expansion, and cancellation or delay strategies. When this is accomplished, the performance appriasal rank order for that branch is reviewed. The lower sections of this ranking are reviewed in relation to the technical demand analysis made previously to see which jobs held by the low performers can be assumed by others. At this point technical competence, current assignment, critical skill and seniority are considered. Through an iterative process, the necessary engineering force reduction is accomplished with the primary consideration, performance, being tempered by these additional factors. If it becomes obvious that the branch is laying off/downgrading personnel who are obviously of higher caliber than those being retained in another area, transfers can be made with proportionate lay offs/ downgrades in the other area. An overriding consideration is a corporate affirmative action plan.

2. AEROG Retention System

The AEROG company is a large matrixed organization which assigns its engineering personnel, on the basis of skill code, capability, availability and related factors, to projects on an "on-loan" basis from a central engineering organization. Because of this "loan" connotation the various projects or programs can only make recommendations with respect to salary actions, promotions, demotions and retention for the people "loaned" to them by the various functional executives. Each functional executive, aided by forecasts from the program managers, determines the requirements within individual skill codes over a specified time interval. When such a forecast indicates more engineers than jobs in a specific skill code a reduction-in-force is in order. Such a reduction-in-force is carried out with the aid of a retention index system, which in AEROG's case is the subject of a collective bargaining agreement between AEROG and an engineering bargaining unit.

Five provisions of the bargaining agreement set forth the pivotal concepts around which the current retention system has been built.

To wit:

1. "The general objective of the procedure . . . is to provide for the accomplishment of workforce reductions to the end that insofar as practicable the reductions will be made equitably, expeditiously, and economically, and at the same time <u>will result in retention on the payroll of those employees regarded by the Management . . . as comprising the workforce that is best able to</u> maintain or

improve the efficiency of the company, further its progress and success and contribute to the successful accomplishment of the company's current and future business."

2. "Management periodically will make a comparative rating of each employee . . . the rating will be referred to as a "retention index" . . ."

3. "Management will consider each employee's competence, diligence and demonstrated usable capabilities based upon his current performance and an understanding of his previous performance. Length of company service will be a positive factor to the extent that the experience so gained continues to be reflected in increased capability."

4. ". . . retention indexing will be into one of four categories . . . First, second third and fourth, respectively."

5. "Employees with twenty or more but less than thirty years of company service will be considered as having no less than a third retention index, and employees with thirty or more years of company service will be considered as having no less than a second retention index."

These phrases, with particular emphasis on the underlined words, have resulted in a rating system that places considerable weight on an employee's current performance and his past five years' salary growth. Implementation by AEROG management of a somewhat mechanistic retention system is tempered with judgment; this judgmental influence is an acknowledged part of the system as may be evidenced by the bargaining agreement wherein it states: "It is recognized that any practicable process of retention indexing cannot be completely free of error as to method used or as to resulting indexes taking into account: the large number of employees, skills, organizations and requirements involved, the fact that numerous management representatives necessarily must participate in the process; and the additional facts that professional employees are involved and many of the factors that must be dealt with in the process are intangible in nature."

A minimum of once a year, and more typically, twice in each year the functional executive responsible for a group of engineers all carrying the same primary skill code, e.g. architectural engineers, will convene a panel of supervisors to assign retention indexes to each of the engineers in the skill code. The assembled panel compiles a rank order listing of the subject engineers from 1 to N (the engineer with the best performance during the past six months is "1"). Each engineer so rated is represented by a supervisor who is intimately familiar with his current assignment and performance; additionally, at least one other supervisor on the panel must be familiar with the engineer's past performance (in fact about one-half the supervisors on the panel will be conversant in this respect). The key to this phase of the process is "consensus." A supervisor may move an individual up on the list so long as a simple majority of the impaneled supervisors agree with him (individual supervisors may abstain from voting in which case the defending supervisor need only secure a majority of those supervisors actually voting).

Once a rank order listing of the engineers under discussion has been achieved the process moves into the second and somewhat mechanical phase. An X-Y plot is constructed in which the Y-axis is the rank order listing of the engineers from "1" to "N" and the X-axis is their five year salary growth (see Figure 3a). The system now employs a mechanical technique to divide the population into retention indexes (the systems require a forced distribution, e.g. 25% of the work force must be in each retention index from First to Fourth). This is accomplished by using the physical location of individual "1" on the Y-axis and the X-axis intercept of the individual in the population that had the greatest five year salary growth and connecting the two intercepts (see Figure 3b).

The resulting line (called AB) is moved parallel to itself starting from the upper right-hand corner of the diagram and moving toward the lower left-hand corner until the data field is divided into four bands each encompassing one-fourth of the population (see Figure 3c).

Those employees to the right of A'B' are assigned retention index "1," those in the band between A"B" and A'B' are "2s" those between A"B" and A"B" are "3s" and those to the left of A'''B''' are "4s." "1s" are the most worthy of retention and "4s" are the most likely to be RIF'd.

The system has now accomplished a comparative rating of each employee and put the employees into one of four categories. It only remains to adjust the ratings for those employees having more


FIGURE 3a. AEROG "X-Y" PLOT

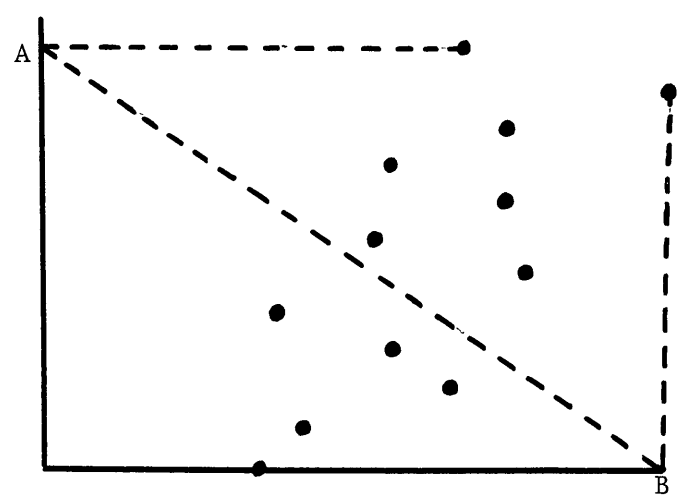



FIGURE 3b. AEROG LINE $\overline{AB}$ DETERMINATION

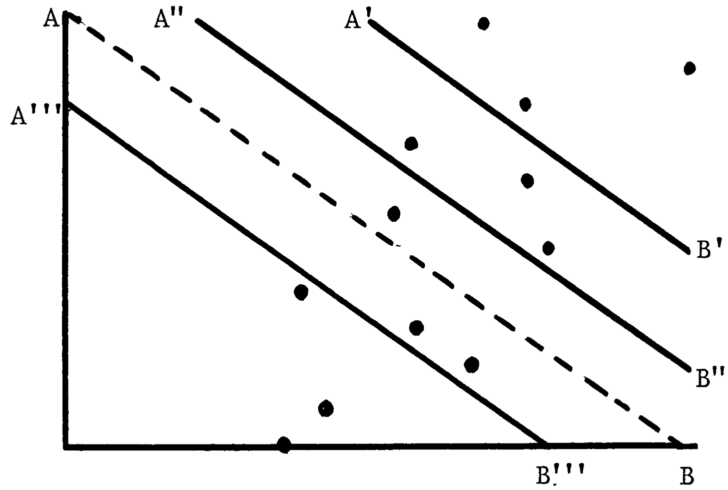



FIGURE 3c. AEROG "BAND" DIVISION

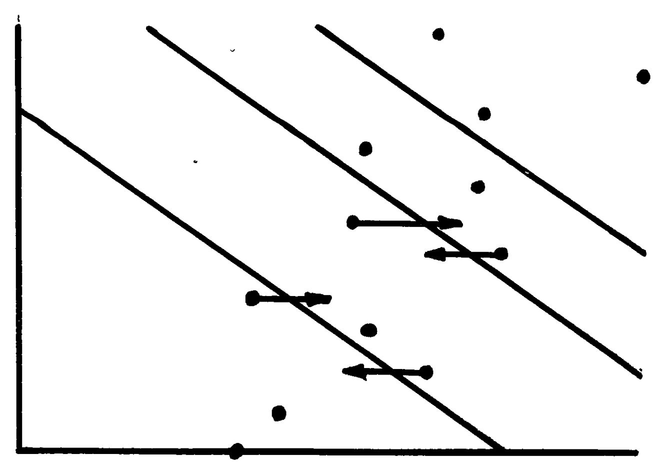


FIGURE 3d. AEROG SENIORITY ADJUSTMENT

than 20 and 30 years service. If the employees with more than 30 years service and 20 years service are indexed as "2s" and "3s" (or better) at this point no adjustment is required; however, if such is not the case such employees are shifted into the proper minimum rating index and, due to the forced distribution aspect, an equal number of "downgrades" are affected. For example in Figure 3d employee 6 is assumed to have 30 years service and hence must be at least "2" while employee 8 is assumed to have 20 years service and hence must be at least "3." Note that the other employees meet or surpass their minimum mandatory rating that both employees 6 and 8 must be moved up a grade which in turn means employees 7 and 10 were moved "down" a grade in order to achieve balanced, forced distribution.

The retention indexing for this group is now complete and the employees are informed as to their current rating. These ratings will stay in effect until the next such exercise is completed. If at any time during the interim a reduction-in-force becomes necessary those people with retention indexes of "4" are the most likely to go out the door. The order in which "4s" actually leave is a function of current assignment and hence while both employees 11 and 12 are "4s" and 12 is lower on the performance list than 11; 11 may still be RIF'd before 12 if 12 has a more critical current assignment in the view of the functional executive.

AEROG, like most large, visible companies applies several comparative statistical checks to the surviving population. They compare the post-RIF population to the pre-RIF population to ensure that the age distribution is relatively unchanged and that the ratio of minorities to total population is essentially constant. On several occasions AEROG has imposed the additional constraint that average salary after a RIF may not exceed average salary before the RIF by more than "X" per cent. Just as the criticality of an individual's current assignment is reviewed at the time people are being selected for layoff, so are these additional age, minority and salary criteria reviewed. If an imbalance exists management will take action to correct it prior to implementation of the RIF.

3. GOVTG Retention System

a. History of Federal Personnel Regulations

The Federal Civil Service Personnel Retention System has evolved into one of the most precise and expensive methods for selecting those who leave or stay in a layoff situation. The spoils system, as political patronage came to be known during Andrew Jackson's Presidency, was creating havoc in the Federal Government in two ways:

1. The newly-elected President rewarded the party faithful with government positions, oftentimes more on the basis of faith than qualification.

2. These political appointees usually lasted only until the next election. This lack of continuity caused by continual personnel turnover was detrimental to the operations of government. The

Pendleton (Civil Service) Act of 1883 was passed to rectify these problems, particularly the removal of personnel for political reasons; and it was modified later by the Lloyd-LaFollette Act of 1912 which allowed for "just cause" removals, such as incompetency and misconduct.

The Civil Service Commission has translated these and other statutes relating to the Federal Retention System into implementing regulations in the Civilian Personnel Regulations, CPR R3, and in the Federal Personnel Manual, FPM Chapter 351.

b. The Retention Register

Each Federal agency maintains a register of all their employees in the order of their retainability. Retention is based on prioritized multiple criteria. Each agency, or competitive area if the scope of the personnel action differs (the latter may be used on a geographic, organizational, installational or project basis) lists its personnel by Competitive Level, Grade, Tenure Group and Subgroup, and Service Computation Date. Each of these parameters require both definition and elaboration.

1. Competitive Levels (C.L.'s) are jointly defined by management personnel officials to consist of clusters of jobs so similar that an employee can readily move from one to another without significant training and without unduly interrupting the work program. Several C.L.'s may exist within the same GS series and grade (within the same trade or occupation and at the same salary range). Such separate C.L.'s are proper where significant differences in recruitment,

training, assignment duties and responsibilities (e.g. supervisory/ non supervisory) exist in the job descriptions.

2. Grade refers to the level of job responsibility (and compensation) of each employee. Federal Civil Servants considered in this analysis rank in the Government Service (GS) levels 12 to 15. (The GS-15 level would correlate with Industry first and second level supervisors in function and salary, the GS-14 to the senior or project engineer, and the GS-12 and GS-13 to the journeyman engineer.)

3. Tenure Groups in federal service fall into three categories:

a. Group I contains all employees holding career appointments (obtained by completing three consecutive years of satisfactory service).

b. Group II consists of all employees who are serving the three year probationary period, and are "career conditional" appointees.

c. Group III consists of all employees hired on a temporary (fixed, short periods) or indefinite basis.

4. Within each of these three groups there are two Tenure Subgroups, A and B, for veterans and non-veterans. The former enjoy higher retention preference.

5. Service Computation Date is the parameter determined for each employee which defines his length of service, or seniority. The employee's service is computed from either (1) his first work day in civil service, (2) civil service time plus time in military service,

if applicable, or (3) either of the former plus a four-year "seniority credit" received for a current Outstanding Performance Award rating.

6. The retention register, therefore, consists of multiple listings of employees by Competitive Level, Grade, Tenure Group, Tenure Subgroup, and Service Computation Date, in that order. Appendix D contains examples of retention registers. There are several categories of employees which may be exempted from the normal adverse personnel action, the reduction-in-force:

a. Those employees undergoing special training on the Intern Program.

b. Those employees with retention priority due to recent hire from military service may be temporarily passed over.

c. Those employees whose retention is necessary for critical, ongoing duties (the failure of which would impair the installation's operation) which could not be assumed by another without undue interruption (over 90 days) may be excepted under "continuing retention" by management intervention.

c. Federal Agency Manpower Determinations

Manpower requirements are based on the agency's assigned mission and projected workload. Therefore any reduction in civilian workforce must be based on changes in mission and/or reduction in workload. When Congress structures the annual appropriation, they may simultaneously require curtailment of a specific functional area or leave management the prerogative of adjusting its own workforce.

In either instance, the management of the project determines which of their functions or missions must be decreased or deleted, and translates these requirements into jobs to be abolished. Each job in civil service has a job description, relating the functions and responsibilities of the position. These job descriptions serve as the basic justification for each "slot," or civil service position.

d. The Red Line

When the jobs to be abolished have been determined, the retention register is annotated with (1) the employees to be declared surplus, and (2) the number of jobs in each C.L./Grade to be abolished. A red line is drawn across the register for each C.L./Grade where the number of jobs and the number of most retainable employees are equal. Those employees not affected by either may retain their present position and are "GARL'ed" (an acronym for Group Action Request List, implying common handling).

e. The Selection Process

The process for selecting those who are retained in the Civil Service reduction-in-force is the process of determining the retention rights of each employee by priority and assigning each in turn until no further options exist. This is accomplished by taking the top ranked employee affected by a job abolishment, and evaluating in order his ability to:

1. Transfer laterally within the C.L. and grade (sometimes called a "bump").

2. Transfer laterally from one C.L. to another at the same grade. This is called "transitioning."

3. Transfer within the C.L. but to a lower grade. This is called a "bump retreat."

4. Transfer to another C.L. and to lower grade. This is called a "transition retreat," and again occurs only when he meets the requirements for the job.

5. If the employee has any of the above options, the agency must make him the best offer consistent with their requirements. If he declines it, they need not make another. If he has no options, the agency must release him through formal layoff notification. Then the next ranking employee is processed in the same way but having access only to those options wherein lower retainability personnel are displaced (e.g. a non-veteran in the career tenure group IB may bump IIA, IIB, IIIA, and IIIB personnel, but not IA's).

### 4. Comparison of COMMOG, AEROG, and GOVTG Retention Systems

In summary it can be said that both COMMOG and AEROG are dedicated toward retaining their best performing engineers during a declining business environment and each gives some degree of consideration to such factors as seniority, current assignment and special skills; additionally, AEROG considers past performance as manifested in salary growth. GOVTG is a seniority-oriented system (operating like AEROG within a unique skill area or competitive level) with special preference being granted to veterans. GOVTG also considers current assignment and performance in arriving at the final retention versus layoff decision.

Each organization treats transfers and bumping slightly differently. Generally COMMOG does not sanction employee initiated transfers, AEROG and GOVTG allow employee initiated or voluntary transfers when employees can qualify for an advertised position. All three systems give their management some flexibility in transferring people to achieve the best blend of skills and experience levels; although employees may refuse a transfer based on these grounds in which case he may be more vulnerable to layoff than if he had transferred.

The GOVTG system provides for a formal bumping and transitioning (i.e. moving into a different skill classification) while such actions in COMMOG and AEROG come about only as a result of management intervention and are not considered to be "rights" of an employee.

# CHAPTER 2

## PHASE ONE--SIMULATED REDUCTIONS IN FORCE

This chapter reports on Phase One, a series of simulated RIFs of the COMMOG, AEROG, and GOVTG 100-engineer samples. A 25% reduction-in-force is made to the COMMOG and AEROG samples using the COMMOG, AEROG, and GOVTG retention systems as understood by the authors. The results of these RIFs are then compared by looking at pre- and post-RIF demographics for each engineering organization. Similarly a 25% reduction-in-force of GOVTG using the GOVTG retention system will be performed and discussed in terms of pre- and post-RIF group characteristics. Inasmuch as the COMMOG and AEROG retention systems require a rank ordering of employees by performance it was not possible to apply these two systems to the GOVTG sample.

Note: while GOVTG collects performance data on its engineers the data are not in a form that can be meaningfully turned into rank order listings. This chapter is divided into four sections, one each for the simulated RIFs of the COMMOG, AEROG, and GOVTG 100-engineer samples and a fourth section that summarizes the effects of using the three retention systems. This fourth section contains: (1) tables listing each COMMOG and AEROG employee who would have been laid off by one or more of the three retention systems, (2) comparative demographics of those employees who would have survived versus those who would have been RIF'd, and (3) some data relative to the degree of correlation observed between the three retention systems.

A. COMMOG Data Sample Results

During 1975 COMMOG continued to suffer from a severe downturn in business caused by the current recession. As a result, personnel reductions were being made in all occupational groups including engineering. A COMMOG manufacturing location was chosen from which to draw a sample of 100 professional engineers and, in fact, the sample was randomly drawn in November 1975. The engineering universe at the subject location was comprised of three branches, consisting of 51 senior engineers, 132 occupational engineers and 220 engineering associates. The senior engineering level is achieved by promotion from the occupational engineering group. Both senior and occupational engineers have similar tours of duty such as development, production support, plant and factory, machine and tool design, etc. The engineering associate universe provides technical support for both of the above mentioned professional engineering groups. For simplicity the 100 unit sample was randomly selected from the occupational engineering universe. The sample, in decreasing order of seniority is shown in Appendix B. The list includes all factors vital to the analysis which are: years of service, age, race, sex, veteran status, salary profile, grade level, education type, skill codes (where available) and performance rank.

This sample was then subjected to a 25% reduction in force. The COMMOG analysis is unique (compared to the AEROG and GOVTG analyses) in that 17 of the 100 sample have, in fact, as of the time of this writing received adverse action, thereby simplifying the task of selecting 25 people for layoff. In order to achieve the full 25% reduction, an additional 8 engineers were selected to receive adverse action by the simulated application of the COMMOG retention criterion. In the case of the AEROG and GOVTG analysis, 25 engineers were selected for layoff from the data base of 100 through a simulated application of the AEROG and GOVTG retention systems.

1. COMMOG Data Sample and COMMOG Retention System

The 3 distinct branches of the COMMOG engineering universe consisted of one which provided technical support to product type A, another supporting product type B, and a third which was a conglomerate technical support group for functions such as plant and factory engineering, machine and tool design, industrial engineering, etc. The expense of these groups were "recovered" via a standard cost system. Therefore, as sales declined, recoveries dropped and losses began to occur which resulted in reduction-in-force plans being generated.

The severity of reduction in a given branch was a function of the drop in recoveries. Reconciliation among branches was done in staff meetings which were held by the location head. Two critical factors were involved in the reconciliation. First, reductions below a critical support level in a given area were avoided. Secondly, if one branch was cutting so deeply that clearly more retainable engineers were receiving adverse action while lower-performing employees in another branch were unaffected, then inter-branch transfers were negotiated. The purpose of these activities was to provide minimum threshold support to all engineering functions and to maximize the net worth of the total engineering universe.

The total branch reduction was subsequently allocated throughout the various sub-branches of that organization via the same methodology described above. Once this was accomplished, the process of individual identification began.

The primary measure of COMMOG retentions is performance. An multi-supervisory appraisal is made annually in such a manner that a performance "stacking" of the engineering universe can be made. The top 25% of this stack is assigned an "outstanding" rating for that review period. When a reduction is necessary, the bottom section of the performance list is ordered on a seniority basis. Layoffs and/or downgrades are initiated starting with the lowest seniority member of the bottom section of the performance list. Candidates having service dates roughly within one year of each other are considered to have the same seniority rank and can therefore be interchanged if the needs of the business warrant doing so. For the needs of the business or for other personnel or long term requirements, overriding adjustments are made for critical skill current assignment, technical competence, and affirmative action plans.

Each sub-branch has within its structure a variety of sub-cells of responsibility and expertise. During the iterative process of personnel identification, lateral reassignments between the sub-cells within a sub-branch and between sub-branches is considered. This is usually accomplished on the basis of existing technical competence plus a recognized secondary expertise. The ten classifications are given in Appendix B. As a general rule, the less-senior, lower-performers in a particular technical classification receive adverse action if reductions are required in that particular area. As stated above, adjustments are made for critical skill, secondary technical expertise, current assignment and/or affirmative action.

Employing the general methodology described above, seventeen of the COMMOG sample actually received adverse action during the latter half of 1975. In order to complete the thesis exercise, an additional eight were chosen by a simulated application of the COMMOG Retention System to the surviving 83 engineers in the sample. The following table compares the demographics of the COMMOG sample prior to and after the reduction-in-force as accomplished by the COMMOG Retention System:

2. COMMOG Data Sample and AEROG Retention System

The AEROG retention system is described in paragraph D2 of Chapter 1 and its application to the AEROG sample is presented in paragraph B1 below. Reference to these sections may be helpful in the review of this analysis.

| | Before | After | Laid off Employees |
|---|---|---|---|
| Average Age | 39.4 | 38.6 | 41.6 |
| Age Range | 28-56 | 28-56 | 28-56 |
| Minorities | 2(2%) | 2(2.7%) | 0(0%) |
| Veterans | 49(49%) | 35(47%) | 14(56%) |
| Average Salary | $19.1K | $19.3K | $18.2K |
| Average Service | 10.9 | 10.3 | 11.4 |
| Average Grade[1] | GS-13 | GS-13 | GS-13 |
| Number Personnel Actions | - | 25 | 25(1:1) |
| Performance Index[2] | 50.5 | 40.0 | 82.1 |

[1] This is an equivalent average grade, i.e. that grade that would be assigned by Civil Service to the typical engineer in the data base.

[2] The Performance Index is merely the sum of the work force performance rankings (ex: 1+2+3+···+99+100) divided by the number of people in the work force. For a 100 person group the performance index is 50.5; similarly, for a 75 person group it is 38.

The COMMOG sample of 100 engineers was arranged into a rank ordered listing on the basis of current performance and this listing became the ordinate (Y-axis) for an X-Y plot. The abcissa (X-axis) was taken to be salary growth over the past five years expressed in percent. The resulting data plot was then divided into the four retention groups identified as "1," "2," "3," and "4" wherein a retention index of "1" is best and a "4" is an immediate candidate for layoff. The AEROG system makes special allowance for people with 20 to 30 years service and for those people with more than 30 years service by guaranteeing them ratings of not less than "3" and "2" respectively. When such an adjustment is necessary, i.e. when an individual's natural rating as developed by the system is less than that to which he is entitled, he is summarily awarded the stipulated minimum rating. For each person who receives this upwardly adjusted rating there must be a corresponding person of the higher rating who is adjusted downward in order to maintain balance since the AEROG system demands equal distribution of ratings for the population taken as a whole. The COMMOG population had 5 individuals who were entitled to a minimum retention index of "3" and 1 who similarly merited a "2." Three of the five who were entitled to a "3" had natural ratings of 3 or better; two of the individuals were "4s" and had to be re-rated. The one individual that was entitled to a minimum rating of "2" had a natural rating of "4" and hence he too was awarded the higher rating.

There were no difficulties encountered in using the AEROG retention system to assign retention ratings to the COMMOG personnel; although, inasmuch as the criticality of the individual COMMOG engineers was not known by the AEROG rater, no attempt was made to grant any relief for this factor. In point of fact, the AEROG system does allow management to start laying off "3's" once 90 percent of the "4's" have been laid off. Therefore, additional refinements could have been made if critical skill, current assignment, etc. information had been available.

The following table compares the demographics of the COMMOG sample prior to and after the reduction-in-force as accomplished by the AEROG retention system:

| | Before | After | Laid off Employees |
|---|---|---|---|
| Average Age | 39.4 | 37.8 | 43.9 |
| Age range | 28-56 | 28-56 | 28-56 |
| Minorities | 2(2%) | 2(2.5%) | 0(0%) |
| Veterans | 49(49%) | 33(44%) | 16(65%) |
| Average Salary | $19.1K | $19.3K | $18.3K |
| Average Service | 10.9 | 10.5 | 12.2 |
| Average Grade[1] | GS-13 | GS-13 | GS-13 |
| Number Personnel Actions | - | 25 | 25(1:1) |
| Performance Index[2] | 50.5 | 39.2 | 84.3 |

[1]This is an equivalent average grade, i.e. that grade that would be assigned by Civil Service to the typical engineer in the data base.

[2]The Performance Index is merely the sum of the work force performance rankings (ex: 1+2+3+···+99+100) divided by the number of people in the work force. For a 100 person group the performance index is 50.5; similarly, for a 75 person group it is 38.

3. COMMOG Data Sample and GOVTG Retention System

The GOVTG Retention System is described in paragraph D3 of Chapter 1. The COMMOG Data Base was listed by seniority and divided into competitive levels (different jobs but at the same GS level). Appendix D contains the details of the resultant Retention Register, the jobs abolished, and a summary list of the personnel impacted. Since the entire sample worked at a single GS level, only the bump lateral, transition lateral, and layoff actions were possible. The following table compares the demographics of the COMMOG sample prior to and after the reduction-in-force as accomplished by the GOVTG Retention System.

| | Before | After | Laid off Employees |
|---|---|---|---|
| Number of employees | 100 | 75 | 25 |
| Average age | 39.4 | 41.2 | 35.2 |
| Age range | 28-56 | 28-56 | 28-56 |
| Minorities | 2(2%) | 1(1.3%) | 1(4%) |
| Veterans | 49(49%) | 29(65.3%) | 0(0%) |
| Average salary | \$19.1K | \$19.3K | \$18.3K |
| Average service | 11.96 yrs | 13.6 yrs | 7 yrs |
| Average grade[1] | 13.0 | 13.0 | 13.0 |
| Total personnel actions | - | 45 | 25 (1.8:1) |
| Performance index[2] | 50.5 | 49.8 | 52.8 |

[1]This is an equivalent average grade, i.e. that grade that would be assigned by Civil Service to the typical engineer in the data base.

[2]The Performance Index is merely the sum of the work force performance ratings (ex: 1+2+3+···+99+100) divided by the number of people in the work force. For a 100 person group the performance index is 50.5; similarly, for a 75 person group it is 38.

4. COMMOG Data Sample Results Comparison

In the above sections we compared, in a tabular form, the average age, age range, minority and veteran percents of universe, average salary, average service, average grade, number of personnel actions, and performance index of the COMMOG sample pre-RIF versus post-RIF for all three retention systems. The analysis included profiles on those personnel remaining on the roll as well as those being laid off. This section will deal with a comparison of the post-RIF data of the COMMOG, AEROG, and GOVTG retention systems applied to the COMMOG sample.

Table 2 of this section provides a compilation of the post-RIF results. The pre-RIF information is also provided for reference.

It is evident from this analysis that the average age of the COMMOG sample after the RIF is lower in the cases of COMMOG and AEROG and higher in the case of GOVTG. This is, of course, due to the seniority/veteran status emphasis in GOVTG as opposed to the performance, critical skill, current assignment then seniority-emphasis in COMMOG and the performance--salary history, critical skill--then seniority emphasis in AEROG. AEROG was slightly lower than COMMOG in that the former was unable to make any over-riding adjustments due to the limited understanding of the personnel involved. Therefore, in this case, performance--salary history criteria dominated. The age range was totally uneffected by the RIF in all three cases.

The average salary of the COMMOG universe increased after the RIF in all three cases. This, of course, meant that all three systems

TABLE 2

PHASE ONE RESULTS--THREE SIMULATED RIFs OF COMMOG PERSONNEL

| Parameter | PRE-RIF | Post-Rif (as conducted by: ) COMMOG | AEROG | GOVTG |
|---|---|---|---|---|
| Age | 39.4 | 38.6 | 37.8 | 41.2 |
| Age Range | 28-56 | 28-56 | 28-56 | 28-56 |
| Average Salary | $19.1K | $19.3K | $19.3K | $19.3K |
| Equivalent GS-Level[1] | 13 | 13 | 13 | 13 |
| Total Personnel Actions | - | 25 | 25 | 45 |
| Veterans | 49(49%) | 35(47%) | 33(44%) | 49(49%) |
| Minorities | 2(2%) | 2(2.6%) | 2(2.6%) | 1(1.3%) |
| Average Years Service | 10.9 | 10.8 | 10.5 | 13.6 |
| Percent Layoff Matches Between COMMOG and | - | 100% | 80% | 28% |
| Performance Index[2] | 50.5 | 40.0 | 39.2 | 49.8 |

[1]This is an equivalent average grade, i.e. that grade that would be assigned by Civil Service to the typical engineer in the data base.

[2]The Performance Index is merely the sum of the work force performance ratings (ex: 1+2+3+···+99+100) divided by the number of people in the work force. For a 100 person group the performance index is 50.5; similarly, for a 75 person group it is 38.

laid off personnel whose aggregate average salary was less than the average of the pre-RIF universe. In the case of COMMOG and AEROG, the results are easy to explain in that there is a high correlation between performance and remuneration. In GOVTG, the reason is a bit more subtle. In this case, the increase is caused by the seniority emphasis which means, that as a rule, the younger, lower-service personnel receive the highest impact and this category is generally in the lower salary area. The equivalent level in this engineering occupational group, defined to be generally GS-13, was unchanged by any of the RIFs.

In the cases of COMMOG and AEROG the RIFs only required a total of 25 personnel actions. In actual practice, these systems would probably involve some reshuffling of personnel, at management's direction, but only on a minimal basis. Therefore, it is realistic to assume a 1 for 1 relationship in these cases. On the other hand, the GOVTG reduction required 45 personnel actions due to the bump-lateral and bump-transition aspects of their retention system. Had there been more than one GS-level involved, the number of actions would have been higher.

The COMMOG and AEROG systems laid off a disproportionate number of veterans whereas the GOVTG system laid off all non-vets. The AEROG and COMMOG impact can be explained by the fact that veterans are generally found more in the older age-longer service segment of the COMMOG sample whereas higher performance is slightly biased toward the younger age group. Therefore, since both systems use performance as a top priority criterion, on the average, veterans are slightly more vulnerable. The GOVTG bias is, of course, caused by veteran status playing a major role in retention in this sector.

Very little can be said about minority impact. COMMOG, AEROG, and GOVTG all have equal opportunity commitments and affirmation action plans; however, the minority percent in the sample is too low to draw any reasonable conclusions.

As can be seen on Table 2, the average years service decreased when AEROG and COMMOG were used to RIF and increased when the GOVTG system was used to conduct the reduction-in-force. The former is caused by the fact that, in the COMMOG sample, there is a high correlation between age and service, and since higher performance is slightly biased toward lower ages (in COMMOG), on average, slightly higher service employees are impacted. The GOVTG system, on the other hand, zeroes in on seniority which must cause a post-RIF increase in average service.

There was an 80% match between the personnel RIF'ed by the COMMOG system and those RIF'd by the AEROG system. With performance a top criterion in both systems, one would expect a reasonable degree of correlation. However, this match may be unrealistically high in that AEROG did not take into account such factors as current assignment, critical skill, etc. The AEROG system provides for this relief but these characteristics could not be captured in the data base. It is interesting to note, however, that, an investigation of the backgrounds of the 5 personnel impacted by COMMOG, but not AEROG, three had just recently been transferred to new organizations and therefore appeared to be more vulnerable. Therefore, these differences can be partially explained on this basis. Looking the other way at the five impacted by AEROG but not COMMOG, two were in an organization that was relatively unaffected by the layoff and the other three had critical skill/current assignment assets. Therefore, it can be stated that there was a good match between the COMMOG and the AEROG impacts on the COMMOG sample. However, it must again be stated that the correlation seems to be rather high and that under different circumstances with a different sample, the match might well be lower.

As might be expected the match between COMMOG and GOVTG is very low. This obviously is caused by the major differences in retention philosophies. In fact, it would be a fruitless exercise to analyze the mis-matches for assignable causes. The matches that were obtained came about because there were some low seniority personnel with low performance ratings.

Finally, Table 2 shows that, in the cases of COMMOG and AEROG, the performance indexes improve significantly whereas the GOVTG index only improved slightly. The first condition is caused, again, by the performance stress in retention. The GOVTG improvement is or appears at least to be a random phenomena.

In summary, it appears that the COMMOG and AEROG retention systems share a good bit of the same elements. A major tool used by AEROG is the salary growth vs. performance analysis discussed in paragraph B of this chapter. COMMOG might do well to look into this as a possible added refinement. Essentially, since performance and salary growth are highly correlated, this X-Y plot analysis tends to provide an aggregate 5-year performance anlaysis rather than current year now used in COMMOG.

The GOVTG retention system bears no resemblance to the other two. The result of this polarization appears to be that, when COMMOG is in a retrenchment condition, the application of either the COMMOG or AEROG system tend to: (1) reduce the average age of the universe, (2) have no extraneous personnel actions, (3) impact more on veterans (because of the performance bias), and (4) retain higher performing people. On the other hand, using the GOVTG system (1) average age tends to increase, (2) there tend to be about twice as many personnel actions as are required in the layoff, (3) non-veterans are more adversely affected, and (4) performance appears to have no decisive role. Therefore, one could postulate that a RIF effected by the GOVTG retention system is more organizationally disruptive, and that low-service, young, recently educated professionals (who tend to be non-veterans in the aggregate) are extremely vulnerable. When educational "half life" considerations are coupled with lack of definitive performance criterion in the GOVTG system, it could be concluded that the total worth or asset value of the post-RIF engineering universe is depreciated more under the GOVTG system than it is with either COMMOG or AEROG.

## B. AEROG Data Sample Results

The AEROG industrial relations department provided an actual retention list for one of the representative skill classifications to support the authors in this endeavor. The list as provided rank ordered 123 people and was complete with appropriate demographic data such as age, salary history, etc. Using a random number generator, 23 individuals were taken from the list to get to the desired sample of 100. It should be emphasized that all of the people in the AEROG sample carry the same primary skill code and every grade or level is present on the list as evidenced by the salary range of $13,900 to $32,500. It should be further noted that all of the individuals on the list are formally classed as engineers; there are no technicians or supervisors on the list. Complete demographic data for each of the 100 AEROG engineers are provided in Appendix C.

1. AEROG Data Sample and AEROG Retention System

This paragraph will examine the use of the AEROG, COMMOG, and GOVTG retention systems on a sample of 100 AEROG engineers. Inasmuch as a reduction-in-force of 25% was to be accomplished, it means that all employees rated as "4s" would be laid-off following this kind of an exercise; criticality of current assignment was not a factor in this particular exercise.[3]

The AEROG retention system provided no surprises when it was applied to the subject sample group but it is of interest to note that:

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[3] In actuality the bargaining agreement that governs RIFs allows AEROG management to retain up to 10% of the "4s" in a given skill, i.e. in this group of 100 wherein 25 of them are "4s" AEROG management could elect to "save" up to three of the "4s" and lay off three "3s" in their place. This exception provision was not used in conducting the simulated RIF.

- 11 of the 25 engineers who had natural ratings of "4" had to be "3s" by the collective bargaining agreement provision (they each had between 20 and 30 years company service),

and

- 1 of the 25 with a natural rating of "4" had to be a "2" (he had more than 30 years service)

These exceptions had to be balanced by making 11 natural "3s" into "4s" and 1 natural "2" into a "3." Similarly:

- 3 of the 25 engineers who had natural ratings of "3" had to be "2s" which meant reducing 3 natural "2s" to "3s." Such actions come as no surprise inasmuch as 35 of the 100 engineers in the sample had between 20 and 30 years company service and 5 other engineers had more than 30 years company service. This may be symptomatic of what could become a significant problem for AEROG in the next three to five years since the mean of company service for these 100 engineers was 17.5 years (prior to the RIF).

Several things about the retention list resulting from this exercise are worthy of comment before proceeding to the before and after picture:

- The top 12 people on the Y-axis (current performance) are all "1s"

- Only 1 person in the top 25 percent is a "4" (he was a natural "3" but adjusted to a "4" for balance purposes)

- The employee in the 39th slot was the lowest to be rated a "1"

- The employee in the 52nd slot was the highest to be rated a natural "4" (he was adjusted to a "3" due to company service)

- 7 of the 25 "1s" had more than 20 years service and hence had to be at least "3s"

The complete retention index (together with demographics on the individual employees is reproduced in Appendix C for those who may want to examine other characteristics, trends, etc.)

The following table compares the demographics of the AEROG sample prior to and after the reduction in force accomplished by the AEROG system:

| | Before | After | Laid off Employees |
|---|---|---|---|
| Average age | 46.9 | 47.9 | 44.0 |
| Age range | 23-61 | 29-61 | 23-56 |
| Minorities | (5%) | 4(5.3%) | 1(4%) |
| Veteran Status | 67(67%) | 52(69%) | 15(60%) |
| Average Salary | $22.3K | $23.4K | $19.1K |
| Average Service | 17.5 | 19.8 | 12.0 |
| Average Grade[1] | 12.9 | 13.2 | 11.9 |
| Number Personnel Actions | - | 25 | 25(1:1) |
| Performance Index[2] | 50.5 | 41.0 | 79.1 |

[1] This is an equivalent average grade, i.e. that grade that would be assigned by Civil Service to the typical engineer in the data base.

[2] The Performance Index is merely the sum of the work force performance rankings (ex: 1+2+3+···+99+100) divided by the number of people in the work force. For a 100 person group the performance index is 50.5; similarly, for a 75 person group it is 38.

2. AEROG Data Sample and COMMOG Retention System

The COMMOG retention system is described in paragraph D1 of Chapter 1. In order to apply the COMMOG system to the AEROG sample, several assumptions and categorizations are made. These assumptions impact the total accuracy of the analysis but not to the point of making it uninteresting.

The AEROG sample, tabulated by decreasing seniority is shown in Appendix C of this section. Unfortunately the AEROG data does not contain sub-sectioned technical classification skills such as electronics engineering (Product A), electronics engineering (Product B), plant engineering, etc. as was the case in the COMMOG sample analysis. This sub-sectioning is vital to the COMMOG retention analysis. Therefore, it was necessary to, by simulation, "create" seven separate and distinct professional engineering organizations with a variety of staff levels. The next step taken was to assign the various professionals on the tabulated list to each of these "created" organizations to the staffing limit previously specified. This assignment was accomplished via a random number technique. The created organizations, then staffing levels, and the by-engineer assignment are also included in Appendix C.

The next step in the analysis was to rank each organization on a performance basis. Then, a 25 percent aggregate reduction in force was accomplished by abolishing jobs through a random number selection method. Therefore, each organization was assigned a specific number of engineering assignments to eliminate in their area of responsibility. The personal identification was then accomplished by laying off those engineers in the lower performance band by order of seniority. The following table displays the results of the reduction-in-force of the AEROG sample using the COMMOG

Retention System.

| | Before | After | Laid-off Employees |
|---|---|---|---|
| Average Age | 46.9 | 47.3 | 45.6 |
| Age Range | 23-61 | 30-58 | 23-61 |
| Percent Minority | 5(5%) | 4(5.3%) | 1(4%) |
| Percent Veterans | 67(67%) | 54(72%) | 13(52%) |
| Average Salary | $22.3K | $23.5K | $18.9K |
| Average Service | 17.5 | 18.3 | 16.5 |
| Average Grade[1] | 12.9 | 13.2 | 11.9 |
| Number Personnel Actions | - | 25 | 25(1:1) |
| Performance Index[2] | 50.5 | 39.6 | 83.3 |

[1]This is an equivalent average grade, i.e. that grade that would be assigned by Civil Service to the typical engineer in the data base.

[2]The Performance Index is merely the sum of the work force performance ratings (ex: 1+2+3+···+99+100) divided by the number of people in the work force. For a 100 person group the performance index is 50.5; similarly, for a 75 person group it is 38.

There were some factors which were missing that, if known, would have made the analysis more accurate (e.g. recognized secondary expertise). This knowledge would have allowed inter-organizational re-assignments to be made which, of course, would have impacted on the results. Secondly, there was no information available as to critical skills, current assignments, etc. which are factors considered in the

COMMOG analysis. These factors could have been simulated via random number assignment, but building assumption on assumption would be unwise, it was felt to be best to concentrate on the first order analysis.

3. AEROG Data Sample and GOVTG Retention System

The GOVTG Retention System is described in paragraph D3 of Chapter 1. The AEROG Data Base was listed by seniority and divided into competitive levels (similar jobs at several GS levels). Appendix D contains the details of the Retention Register, the jobs abolished, and a summary list of personnel impacted. Since the entire sample worked in a single skill area, only bump, bump-retreat, and layoffs were possible. The following table compares the demographics of the AEROG sample prior to and after the reduction-in-force accomplished by the GOVTG Retention System:

| | Before | After | Laid off Employees |
|---|---|---|---|
| Average age | 46.9 | 48.6 | 41.8 |
| Age range | 23-61 | 33-59 | 28-61 |
| Minorities | 5(12.5%) | 4(5.3%) | 1(4%) |
| Veterans | 67(67%) | 52(69.3%) | 15(60%) |
| Average salary | $22.3K | $23.8K | $17.8K |
| Average service | 17.4 | 19.3 | 11.8 |
| Average grade[1] | 12.9 | 13.4 | 11.4 |
| Total personnel actions | - | 63 | 25(2.5:1) |
| Performance index[2] | 50.5 | 40.7 | 79.8 |

[1]This is an equivalent average grade, i.e. that grade that would be assigned by Civil Service to the typical engineer in the data base.

[2]The Performance Index is merely the sum of the work force performance ratings (ex: 1+2+3+···+99+100) divided by the number of people in the work force. For a 100 person group the performance index is 50.5; similarly, for a 75 person group it is 38.

4. AEROG Data Sample Results Comparison

This section describes what happens to a group of 100 AEROG engineers when a mock reduction-in-force is accomplished using the AEROG, COMMOG, and GOVTG retention systems. The principal technique for analyzing the effects of using a particular retention system to conduct the RIF will be to look at the composite demographics of the work force before and after the RIF; additionally, some data are presented relative to the characteristics of those employees who were retained versus those who were laid off.

The discussion will concentrate on explaining why some people were retained by all three systems, why some were laid off by two of the systems, and why eight of twenty-five engineers were laid off by all three systems.

Table 3 presents a "before and after" demographic summary of the AEROG work force and accounts for the results observed from employing the three different retention systems. In reviewing the data depicted in Table 3 it should be remembered that the AEROG and COMMOG retention systems stress performance (both past and present in the case of AEROG) while GOVTG emphasizes seniority and veteran status.

As can be seen in Tables 3 and 4, regardless of which retention system is used to conduct a RIF of AEROG people, the retained work force is:

- older
- more senior in company service
- higher paid (with higher salary growth)
- better performing
- comprised of more veterans

TABLE 3

PHASE ONE RESULTS--THREE SIMULATED RIFs OF AEROG PERSONNEL

| Parameter | PRE-RIF | POST-RIF (as conducted by:__) AEROG | COMMOG | GOVTG |
|---|---|---|---|---|
| Age | 46.9 | 47.9 | 47.3 | 48.6 |
| Age Range | 23-61 | 29-61 | 30-58 | 33-59 |
| Average Salary | $22.2K | $23.4K | $23.5K | $23.8K |
| Equivalent GS-Level[1] | 12.9 | 13.2 | 13.2 | 13.4 |
| Total Personnel Actions | - | 25 | 25 | 63 |
| Veterans | 67(67%) | 52(69.3%) | 54(72%) | 52(69.3%) |
| Minorities (number and %) Remaining | 5(5%) | 4(5.3%) | 4(5.3%) | 4(5.3%) |
| Average Years Service | 17.5 | 19.8 | 18.3 | 19.3 |
| Percent Layoff Matches Between AEROG and: | - | 100% | 56% | 56% |
| Performance[2] | - | 41.0 | 39.6 | 40.7 |

[1]This is an equivalent average grade, i.e. that grade that would be assigned by Civil Service to the typical engineer in the data base.

[2]The Performance Index is merely the sum of the work force performance ratings (ex: 1+2+3+···+99+100) divided by the number of people in the work force. For a 100 person group the performance index is 50.5; similarly, for a 75 person group it is 38.

than is the work force prior to the RIF. The question then becomes: "why did these trends arise and why are the actual values different depending on which of the three retention systems was employed?"

In examining the resultant differences it is useful to look at sub-sets of the AEROG work force, i.e. divided into upper and lower halves by age, seniority, and performance. A summary of these sub-sets is shown below as Table 4 together with the appropriate before and after baseline data.

TABLE 4

AEROG POPULATION REDUCATION TRENDS

| | Avg. Age | Avg. Yrs. Service | Avg. Salary | Avg. Perf. | % Vets. | 5 yr. Salary Growth |
|---|---|---|---|---|---|---|
| Before-RIF Population | 46.9 | 17.9 | 22.3 | 50.5 | 67.0 | 27.8 |
| Post-RIF Pop. (done by AEROG) | 47.9 | 19.8 | 23.4 | 41.0 | 69.3 | 29.5 |
| Post-RIF Pop. (done by COMMOG) | 47.3 | 18.3 | 23.5 | 39.6 | 72.0 | 28.7 |
| Post-RIF Pop. (done by GOVTG) | 48.6 | 19.3 | 23.8 | 40.7 | 69.3 | 27.5 |
| Before-RIF Pop. with respect to: | | | | | | |
| Upper 50% by Age | 53.0 | 21.3 | 22.6 | 50.5 | 70.0 | 25.1 |
| Lower 50% by Age | 40.8 | 14.3 | 22.0 | 50.5 | 64.0 | 30.4 |
| Upper 50% by Seniority | 51.2 | 23.3 | 22.6 | 51.1 | 76.0 | 24.2 |
| Lower 50% by Seniority | 42.6 | 12.4 | 22.0 | 49.9 | 58.0 | 31.3 |
| Upper 50% by Current Perf. | 47.2 | 18.0 | 24.8 | 25.5 | 64.0 | 31.0 |
| Lower 50% by Current Perf. | 46.6 | 17.7 | 19.8 | 75.5 | 70.0 | 24.6 |

From Table 4 it can be seen that the older AEROG employee (those in the upper 50% by age) have high company seniority, an average of 21.3 years, which due to the AEROG collective bargaining agreement means it is highly unlikely that they will be RIF'd. Similarly, it is unlikely that this group of people will suffer too severely when rated by the GOVTG system since it places considerable positive emphasis on seniority.

A slightly different but amplifying position can be seen by looking at the population split into upper and lower 50% by seniority. In this instance it is clear once again that the group in the upper 50% are unlikely to be laid off by either the AEROG or GOVTG systems (40 of the 50 people in this group had 20 or more years service which guaranteed them a rating of at least "3" under the AEROG system). Perhaps the most significant data to come from this sort by seniority is the difference in the performance index between the two seniority groups. The upper 50% have a performance index of 51.1 while those in the lower half have a 49.9. Inasmuch as the COMMOG retention system is heavily biased towards retaining those people with the best performance it is likely to be those AEROG engineers in the lower 50% by seniority; or expressed in the opposite fashion, the COMMOG system would tend to lay off people in the upper 50% category by seniority.

The third major conclusion that can be drawn from Table 4 centers around the data associated with the population when it is divided into upper and lower 50% by current performance. The average age and years of company service are not materially different in either case from those of the population taken as a whole but, the same is not true for salary and salary growth. The difference in salary and salary growth between the top performers and the bottom half is significant and it virtually ensures that the post-RIF population resulting from using either the AEROG or COMMOG retention systems will have a higher average salary than the pre-RIF population. The same conclusion appears to be evidenced in the seniority data (but certainly not as vividly) and it is probably this factor that contributes to the post-RIF being higher than the pre-RIF salary when the GOVTG system is used. That is to say that seniority and salary seem to be positively correlated and hence a system that retains people on the basis of seniority can expect to see a higher average salary after conducting a RIF.

From the conclusions stated above the comparative data shown in Table 4 appear to be consistent. The AEROG and COMMOG systems laid off 14 of the same people when simulated RIF was conducted and the characteristics of the surviving work force are explainable with respect to resulting average age, age ranges, average performance, salaries and company service. As might be expected the work force resulting from using the AEROG system as compared to the COMMOG system is older, the age ranges are almost identical, the performance index is not as good as that achieved by the COMMOG system, salaries are comparable, and company service is markedly higher.

Similarly, a comparison of the work force resulting from using the AEROG system versus the GOVTG system reveals that the AEROG system results in a slightly younger work force (with a greater age range) and factors such as performance, salary, and company service are virtually identical. Again both the AEROG and GOVTG systems laid off 14 of the same people when employed against the AEROG data base.

The widest range of data is seen by comparing the COMMOG and GOVTG columns of Table 3, which is not surprising based on the comparisons described above between AEROG and COMMOG and AEROG and GOVTG. COMMOG appears to satisfy their desire to stress performance while GOVTG manages to operate on a seniority basis and AEROG is somewhere between these two systems; i.e. AEROG is a performance-based system tempered with a consideration of past performance and seniority.

Comparative data relative to veterans and minorities as affected by the three retention systems are slightly more difficult to analyze. In the case of veterans in the post-RIF populations it can be said that their percentages are higher regardless of the retention system employed than in the pre-RIF population. Table 4 showed that 76 percent of those people in the upper half of the AEROG population by seniority are veterans, which explains the comparative results shown in Table 3 for AEROG and GOVTG. What is less obvious is why using the COMMOG system resulted in the highest post-RIF percentage of veterans in the remaining work force. The authors are unwilling to say that performance and veteran status have a high, positive correlation, and indeed the data on Table 4 suggest that if any correlation exists it is negative in nature, and therefore conclude that this is a true anomaly probably brought about by the simulation technique used when operating with the COMMOG system. In any event the anomaly is not thought to be significant to the results and conclusions of this exercise.

Statistically there are not enough data to report anything concrete relative to the treatment of minorities by the three retention systems although two generalized statements can be made with a perceived degree of fairness. Prior to the RIF the AEROG work force had 5 minority employees out of a 100 or 5 percent; after the RIF, in each case, there were 4 minority employees out of 75 or about 5.3 percent. One of the tests employed by AEROG management is a check to see that the minority composition of the work force (on a percentage basis) remains relatively constant. All three of the subject retention systems would have passed this test in this case but no universal statement or conclusion could be reached.

The other interesting point to come from this exercise was that the same minority employee was laid off by all three of the retention systems (he was one of the eight common laidoff individuals). He was a low performer, with average salary growth, and low seniority all of which combined to make him a unanimous choice for layoff.

The reader may recall that earlier in the section a profile of those individuals laidoff by the three retention systems was presented as the use of the systems was described; below is a summary of that profile data:

These data may serve to amplify some of comments contained above in the comparative discussion. Some additional facts and figures with respect to those employees laidoff by the three retention systems are presented sans discussion as Table 5.

PROFILE OF AEROG EMPLOYEES AS LAIDOFF BY

| | AEROG | COMMOG | GOVTG |
|---|---|---|---|
| Average age | 44.0 | 45.6 | 41.8 |
| Age range | 23-56 | 23-61 | 23-61 |
| Minorities | 1(4%) | 1(4%) | 1(4%) |
| Veterans | 15(60%) | 13(52%) | 15(60%) |
| Average salary | $19.1K | $18.9K | $17.8K |
| Average service (years) | 12.0 | 16.5 | 11.8 |
| Average performance index[1] | 79.1 | 83.3 | 79.8 |

[1]The Performance Index is merely the sum of the work force performance ratings (ex: 1+2+3+···+99+100) divided by the number of people in the work force. For a 100 person group the performance index is 50.5; similarly, for a 75 person group it is 38.

C. GOVTG Data Sample Results

1. General

The Government Retention System was applied initially to a sample of 100 government engineers by conducting a reduction-in-force as though they were the total population in the competitive area. Several simplifying assumptions were made: (1) The actual data supplied contained 78 competitive levels for 100 engineers, and, if this had been used, it would have greatly circumvented the retention criteria.[4] Therefore the sample was split by grade and series into 18 Competitive

[4]This proliferation of competitive levels is not uncommon in government service (see comments by questionnaire respondents in paragraph 7 of Appendix G).

TABLE 5

AEROG EMPLOYEES LAIDOFF BY

| Who Were in The: | No. 1 Sample | AEROG System | COMMOG System | GOVTG System |
|---|---|---|---|---|
| Upper 25% by Seniority | (25) | 0[1] | 8 | 4 |
| Upper 33% by Seniority | (33) | 0[1] | 9 | 5 |
| Upper 50% by Seniority | (50) | 7 | 12 | 6 |
| Lower 50% by Seniority | (50) | 18 | 13 | 19 |
| Upper 50% by Age | (50) | 9 | 13 | 9 |
| Lower 50% by Age | (50) | 16 | 12 | 16 |
| Upper 50% by Performance | (50) | 1 | 0 | 1 |
| Upper 60% by Performance | (60) | 4 | 1 | 4 |
| Upper 75% by Performance | (75) | 8 | 8 | 7 |
| Upper 50% by Salary | (50) | 2 | 1 | 0 |
| Lower 50% by Salary | (50) | 23 | 24 | 25 |
| Upper 50% by Salary Growth | (50) | 7 | 9 | 13 |
| Lower 50% by Salary Growth | (50) | 18 | 16 | 12 |
| Veteran | (67) | 15 | 13 | 15 |
| Non-veteran | (33) | 10 | 12 | 10 |

[1]The 40 most senior employees had 20+ years service and are therefore guaranteed retention ratings of 3 or better.

Levels. Retention registers were prepared for each grade/series. The jobs to be abolished (selected by random number) were annotated and the Red-Lining function (equating remaining jobs with the most senior engineers) was accomplished. (2) The seniority ranking was based on service computation date only. It was assumed that credit for outstanding performance appraisals had already been considered. (3) No allowance was made for attrition (retire, transfer, or quit) to eliminate multiple runs and changes in assignment which normally occur during a reduction-in-force.

2. GOVTG Data Base

Beginning with the most senior engineer whose job had been abolished and working person-by-person to the leat retainable engineer, a list of engineers is prepared which defines the actions to be taken in retrenching. Table 6 reflects a summary of the actions taken, listing types of engineer by grade and veteran status laid off, and the numbers and types of other adverse actions (lateral assignments, transitions, and retreats) taken to achieve required strength. (There are 2.5 times as many adverse actions as there are layoffs!) The age and grade distribution was taken for the sample before and after the RIF. It is interesting that while the distributions remained approximately the same, both the average age and GS level increase (if only nominally in the latter case).

3. COMMOG Data Base

Table 7 depicts the results of the same type RIF performed in the same manner, but with the COMMOG data base. Because of the differences[5] between the three data bases, no direct comparison would be valid; however, the lack of higher and lower GS levels in the communications sample does provide insight into the part which bump

[5] The communications data base consists of 100 engineers all within the same comparable GS level but working on jobs requiring different backgrounds. The latter has been roughly equated to ten different competitive levels.

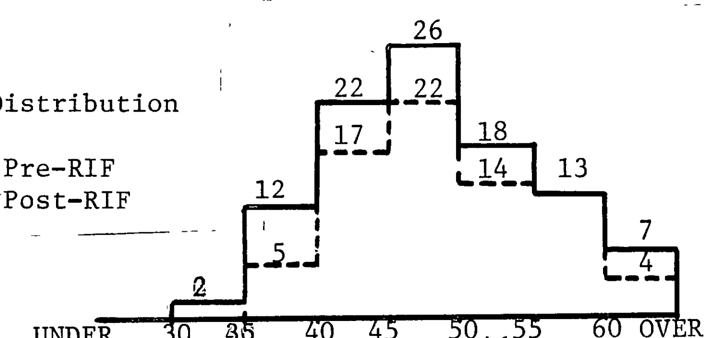
TABLE 6

SUMMARY OF GOVERNMENT ENGINEERS REDUCED-IN-FORCE
BY THE GOVERNMENT RETENTION SYSTEM

| | | |
|---|---|---|
| Total Adverse Actions Taken | | 62 |
| Consisting of: | | |
| 1. Total Laid Off | 25 | |
| GS-15 | 1 | |
| GS-14 | 6 | |
| GS-13 | 14 | |
| GS-12 | 4 | |
| (Of which 12 were veterans and 13 were non-veterans) | | |
| 2. Lateral Reassignments (Same Competitive Level and Grade) | 13 | |
| 3. Lateral Transitions (Same Grade but another Competitive Level) | 7 | |
| 4. Bump Retreats (Same Competitive Level but at a Lower Grade) | 16 | |
| 5. Transition Retreats (Another Competitive Level and Lower Grade) | 1 | |

Age Distribution

—— Pre-RIF
- - - Post-RIF

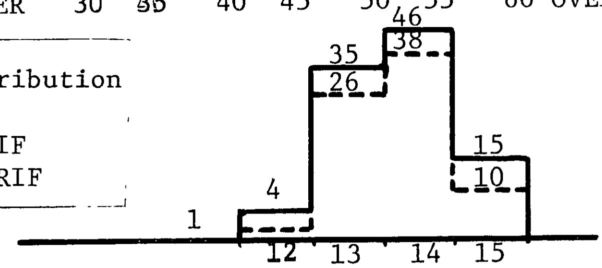



Pre-RIF Average
Age = 47.9 years

Post-RIF Average
Age = 49.0 Years

Grade Distribution

—— Pre-RIF
- - - Post-RIF




Pre-RIF Average
GS-Level = 13.7

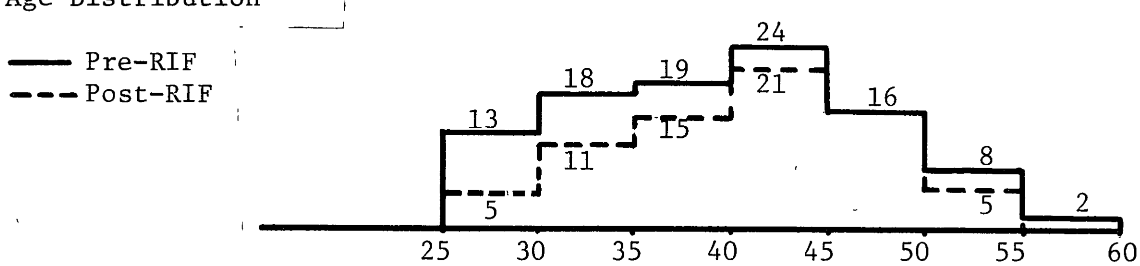
Post-RIF Average
GS-Level = 13.8

TABLE 7

SUMMARY OF COMMUNICATIONS ENGINEERS REDUCED-IN-FORCE BY THE GOVERNMENT RETENTION SYSTEM

| | | |
|---|---|---|
| Total Adverse Actions Taken | | 45 |
| Consisting of: | | |
| 1. Total Laid Off (All GS-13 Equivalents and Non-Veterans) | 25 | |
| 2. Lateral Reassignment (Same Grade and Competitive Level) | 15 | |
| 3. Lateral Transitions (Same Grade but another Competitive Level) | 5 | |

Age Distribution




Average Age Pre-RIF = 39.7

Average Age Post-RIF = 41.2

Grade Distribution: No change since all were GS-13s retreat and transition retreat actions play in the Government retention system. There are few personnel actions (45 for 25 layoffs or a ratio of 1.8) as a result, and the RIF is much more centered on the young, non-veteran (all laid off were non-veterans) engineers. In this case the average age of the sample after the personnel action has increased by 1.5 years, and the distribution has shifted to the older ages.

4. AEROG Data Base

The same RIF procedure was followed with the Aerospace engineers data base and the results are summarized in Table 8. Again there are differences in the data base. (In this case the sample consists of multiple GS level engineers who all work in the same skill classification--one competitive level.) This difference allows us to evaluate the value of transitioning (lateral and retreat) to the reduction in force. There are more adverse actions than expected (63 for a ratio of 2.5) apparently due to the "ripple" effect of higher-level jobs abolitions impacting the next level by bump retreats. Once again the average age increases about the same amount, but the average GS level increases significantly.

D. <u>Phase One Layoff Summary</u>

1. General

The preceding three paragraphs (IIA, B, and C) have dealt with the COMMOG, AEROG, and GOVTG Data Sample results. It is appropriate

TABLE 8

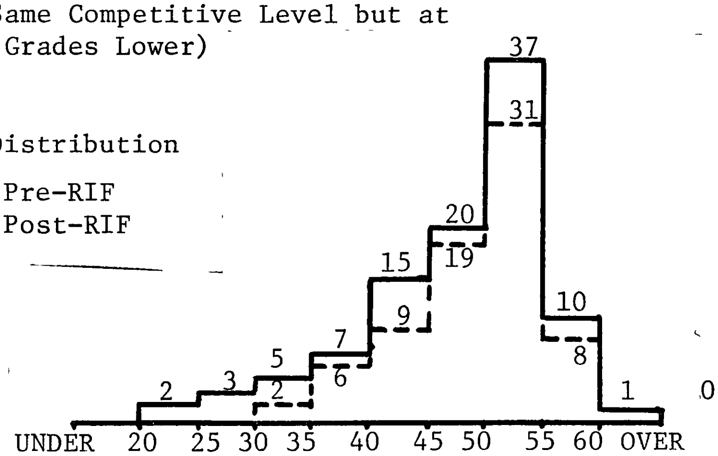
SUMMARY OF AEROSPACE ENGINEERS REDUCED-IN-FORCE BY THE GOVERNMENT RETENTION SYSTEM

| | | | |
|---|---|---|---|
| Total Adverse Actions Taken | | | 63 |
| Consisting of: | | | |
| 1. Total Laid Off | | 25 | |
| GS-12 Equivalents | 19 | | |
| GS-10 Equivalents | 5 | | |
| GS-7 Equivalents | 1 | | |
| (of which 15 were veterans and 10 were non-veterans) | | | |
| 2. Lateral Reassignments (Same Competitive Level and Grade) | | 11 | |
| 3. Bump Retreats (Same Competitive Level but at 1 Lower Grade) | | 24 | |
| 4. Bump Retreats (Same Competitive Level but at 2 Grades Lower) | | 2 | |
| 5. Bump Retreats (Same Competitive Level but at 3 Grades Lower) | | 1 | |

Age Distribution

—— Pre-RIF

- - - Post-RIF



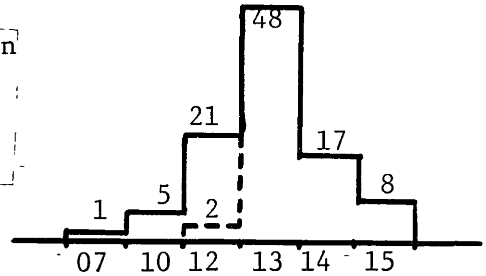

Pre-RIF Average Age = 46.9 years

Post-RIF Average Age = 48.8 years

Grade Distribution

—— Pre-RIF

- - - Post-RIF




Pre-RIF Average GS-Level = 12.9

Post-RIF Average GS-Level = 13.4

here to compare the results of the two data samples that were acted on by simulation of all three retention systems: COMMOG and AEROG. Table 9 lists the COMMOG employees laid off by the three systems and develops the number of employees with more than one system laid off. A total of 47 different employees were affected by the three. Note that there were only 5 employees who were laid off by all three systems. Table 10 shows the same information for the AEROG sample. Only 42 different employees were affected by the three systems of which 8 were laid off by all three.

2. The Data Base

The three 100-engineer data samples are by no means homogenious. Table 11 contains a comparison of the composite key characteristics from each source under the column Pre-Reduction Baseline. The Communications Engineers are generally younger and less experienced, particularly compared with the Government engineers. They also have the highest non-veteran concentration. The Aerospace engineers are predominately near middle age. All three groups were all male and there were 6 minority engineers in the sample. The Communications engineers are more recent hires and at the same level of responsibility (grade). They therefore have lower average salaries than the Aerospace group and the Government group, which are multi-level and the latter of which has twice the average experience.

TABLE 9

PHASE ONE COMMOG DATA SAMPLE LAYOFF COMPARISON

| Employee Laid Off | By COMMOG Retention System | Match of COMMOG to AEROG | By AEROG Retention System | Match of AEROG to GOVTG | By GOVTG Retention System | Match of GOVTG to COMMOG |
|---|---|---|---|---|---|---|
| 101 | | | x | | | |
| 102 | | | | | x | |
| 103 | x | x | x | | | |
| 104 | x | x | x | x | x | x |
| 108 | | | | | x | |
| 109 | | | | | x | |
| 110 | | | | | x | |
| 113 | x | x | x | | | |
| 114 | | | | | x | |
| 115 | x | x | x | | | |
| 116 | x | x | x | x | x | x |
| 122 | x | x | x | | | |
| 123 | x | x | x | | | |
| 125 | | | x | | | |
| 131 | | | | | x | |
| 136 | | | | | x | |
| 141 | x | | | | | |
| 142 | x | x | x | | | |
| 145 | x | x | x | | | |
| 147 | | | | | x | |
| 148 | | | x | | | |
| 149 | | | | | x | |
| 150 | | | x | | | |
| 151 | x | x | x | x | x | x |
| 152 | x | | | | | |
| 153 | | | | | x | |
| 154 | x | x | x | | | |
| 155 | x | x | x | | | |
| 156 | x | x | x | | | |
| 158 | | | | | x | |

TABLE 9 (Continued)

| Employee Laid Off | By COMMOG Retention System | Match of COMMOG to AEROG | By AEROG Retention System | Match of AEROG to GOVTG | By GOVTG Retention System | Match of GOVTG to COMMOG |
|---|---|---|---|---|---|---|
| 162 | x | x | x | x | x | x |
| 164 | x | x | x | | | |
| 167 | | | | | x | |
| 169 | | | | | x | |
| 174 | | | x | x | x | |
| 175 | x | x | x | | | |
| 177 | | | | | x | |
| 178 | x | | | | x | x |
| 179 | x | x | x | | | |
| 180 | x | x | x | | | |
| 181 | | | | | x | |
| 183 | x | x | x | | | |
| 188 | | | | | x | x |
| 189 | | | | | x | |
| 192 | | | | | x | |
| 199 | x | | | | | |
| 200 | x | x | x | x | x | x |
| | | 20 | | 6 | | 7 |

Note: There are 47 total entries and 5 employees who were laid off by all three.

TABLE 10

PHASE ONE AEROG DATA SAMPLE LAYOFF COMPARISON

| Employee Laid Off | By AEROG Retention System | Match of AEROG to COMMOG | By COMMOG Retention System | Match of COMMOG to GOVTG | By GOVTG Retention System | Match of GOVTG to AEROG |
|---|---|---|---|---|---|---|
| 205 | x | | | | x | x |
| 206 | | | x | | x | x |
| 208 | x | x | x | x | x | x |
| 210 | | | x | x | x | |
| 212 | x | x | x | x | x | x |
| 213 | | | x | | | |
| 214 | | | x | x | x | |
| 220 | x | | | | x | x |
| 226 | x | x | x | x | x | x |
| 227 | | | | | x | |
| 231 | x | x | x | | | |
| 235 | x | | | | x | x |
| 236 | | | | | x | |
| 239 | | | x | x | x | |
| 241 | | | | | x | |
| 242 | x | | | | | |
| 244 | | | | | x | |
| 246 | | | x | | | |
| 247 | x | x | x | x | x | x |
| 249 | x | | | | | |
| 253 | | | x | x | x | |
| 256 | | | | | x | |
| 258 | | | x | | | |
| 259 | x | x | x | x | x | x |
| 265 | x | | | | | |
| 266 | x | x | x | | | |
| 271 | | | x | | | |
| 274 | x | | | | x | x |
| 277 | x | | | | x | x |
| 280 | | | x | x | x | |

TABLE 10 (Continued)

| Employee Laid Off | By AEROG Retention System | Match of AEROG to COMMOG | By COMMOG Retention System | Match of COMMOG to GOVGT | By GOVTG Retention System | Match of GOVTG to AEROG |
|---|---|---|---|---|---|---|
| 282 | x | | | | | |
| 283 | x | | | | | |
| 284 | x | x | x | x | x | x |
| 288 | x | x | x | | | |
| 290 | | | x | | | |
| 292 | | | | | x | |
| 294 | x | x | x | x | x | x |
| 295 | x | x | x | | | |
| 296 | x | x | x | | | |
| 297 | x | x | x | | | |
| 298 | x | x | x | x | x | x |
| 300 | | | | | x | x |
| | | 14 | | 13 | | 14 |

Note: There are 42 total entries and 8 employees who were laid off by all three.

TABLE 11

POST-PHASE ONE RIF-RETAINED PERSONNEL DEMOGRAPHICS

| Data Samples | | Baseline Pre-Reduction | Retention System: Communication | Retention System: Aerospace | Retention System: Government |
|---|---|---|---|---|---|
| Communications | Average Age | 39.4 | 38.6 | 37.8 | 41.2 |
| | Age Range | 28-56 | 28-56 | 28-56 | 28-56 |
| | Minorities | 2% | 2.7% | 2.5% | 1.3% |
| | Veterans | 49% | 47% | 44% | 65.3% |
| | Average Salary | $19.1K | $19.3K | $19.3K | $19.3K |
| | Average Service | 10.9 | 10.3 | 10.5 | 13.6 |
| | Average Grade | GS-13 | GS-13 | GS-13 | GS-13 |
| | # Pers. Actions | - | 25 | 25 | 45 |
| | Performance Index[1] | 50.5 | 40.0 | 39.2 | 49.8 |
| Aerospace | Average Age | 46.9 | 47.3 | 47.9 | 48.6 |
| | Age Range | 23-61 | 30-58 | 29-61 | 33-59 |
| | Minorities | 5% | 5.3% | 5.3% | 5.3% |
| | Veterans | 67% | 72% | 69% | 69.3% |
| | Average Salary | $22.3K | $23.5K | $23.4K | $23.8K |
| | Average Service | 17.5 | 18.3 | 19.8 | 19.3 |
| | Average Grade | GS-12.9 | GS-13.2 | GS-13.2 | GS-13.4 |
| | # Pers. Actions | - | 25 | 25 | 63 |
| Government | Average Age | 47.9 | - | - | 49 |
| | Age Range | 30-65 | - | - | 35-65 |
| | Minorities | 5% | - | - | 6.7% |
| | Veterans | 75% | - | - | 83% |
| | Average Service | 21.6 | - | - | 23.1 |
| | Average Grade | GS-13.7 | - | - | GS-13.8 |
| | # Pers. Actions | - | - | - | 62 |

[1] The Performance Index is merely the sum of the force performance rankings divided by the number in the group. For a 100 person sample 50.5 is the result, for 75 it is 38. Non-optimal performance based reduction procedures will, of course achieve higher (worse) indices.

3. The Post-Reduction Work Force

Table 11 compares the results of a 25 person (25%) reduction on the key demographics of the remaining personnel. A number of instructive trends emerge from the comparison.

a. All systems result in a retained work force which is, on the average, older, more senior in organization service, higher paid, better performing, and comprised of more veterans than before the personnel action.

b. The Communications and Aerospace systems make the minimum personnel actions to achieve the desired reduction. The Government system, through a more involved bumping and transitioning scheme, may take two to three times as many actions!

c. The Communications and Aerospace retention systems emphasize performance and therefore achieve, through personnel action, an improvement in the quality of the remaining work force. The Government retention system considers only exemplary performance in terms of increasing seniority, the basic retention criteria.

4. The Personnel Laid Off

Table 12 provides a similar comparison of the key demographics of the 25 man samples laid off by each retention system. Again, a number of instructive trends emerge from this comparison.

a. The lower average age, salary, and service time of the personnel laid off by the Government retention system reflect a seniority based system.

TABLE 12

PHASE ONE LAID OFF PERSONNEL DEMOGRAPHICS

| Data Sample | | Baseline Pre-Reduction | Retention System: Communication | Retention System: Aerospace | Retention System: Government |
|---|---|---|---|---|---|
| Communications | Average Age | 39.4 | 41.6 | 43.9 | 35.2 |
| | Age Range | 28-56 | 28-56 | 28-56 | 28-56 |
| | Minorities | 2% | 0% | 0% | 4% |
| | Veterans | 49% | 56% | 65% | 0% |
| | Average Salary | $19.1K | $18.2K | $18.3K | $18.3K |
| | Average Service | 10.9 | 11.4 | 12.2 | 7 |
| | Average Grade | GS-13 | GS-13 | GS-13 | GS-13 |
| | Performance Index[1] | 50.5 | 82.1 | 84.3 | 52.8 |
| Aerospace | Average Age | 46.9 | 45.6 | 43.9 | 41.8 |
| | Age Range | 23-61 | 23-61 | 23-56 | 28-61 |
| | Minorities | 5% | 4% | 4% | 4% |
| | Veterans | 67% | 52% | 60% | 60% |
| | Average Salary | $22.3K | $18.9K | $19.1K | $17.8K |
| | Average Service | 17.5 | 16.5 | 12 | 11.8 |
| | Average Grade | GS-12.9 | GS-11.9 | GS-11.9 | GS-11.4 |
| | Performance Index[1] | 50.5 | 83.3 | 79.1 | 79.8 |
| Government | Average Age | 47.9 | - | - | 44.2 |
| | Age Range | 30-65 | - | - | 33-63 |
| | Minorities | 5% | - | - | 0% |
| | Veterans | 75% | - | - | 48% |
| | Average Service | 21.6 | - | - | 15.1 |
| | Average Grade | GS-13.7 | - | - | GS-13.2 |

[1]The Performance Index is merely the sum of the force performance rankings divided by the number in the group. For a 100-person sample 50.5 is the result, for 75 it is 38. Non-optimal performance based reduction procedures will, of course, achieve higher (worse) indices.

b. The composite performance indices of those laid off indicate consistent release of lower performers by Aerospace and Communications. The low performance index for the Communications sample and the high of the Aerospace sample would indicate that performance quality is more random in the individuals selected for layoff by the Government retention system.

c. A comparison of the individuals laid off by the three systems indicates only a 10 to 20% (Communications and Aerospace samples match) by all three systems. Using the Aerospace laid off group, the three systems match as follows:

| | |
|---|---|
| AEROSPACE/COMMUNICATIONS: | 39% |
| AEROSPACE/GOVERNMENT: | 38% |
| COMMUNICATIONS/GOVERNMENT: | 35% |

Using the Communications group, however, yields the following percentage matches: COMMUNICATIONS/AEROSPACE: 67%, COMMUNICATIONS/GOVERNMENT: 16%, and AEROSPACE/GOVERNMENT: 14%. It appears that the performance-based systems correlate more closely. The Communications system stresses performance; the Aerospace system is performance-based, but tempered with considerations of salary growth rate and seniority; and the Government system is at the seniority end of the spectrum.

# CHAPTER 3

## PHASE TWO--HYPOTHESES AND QUESTIONS (QUESTIONNAIRE ANALYSIS)

Phase Two of this thesis deals with an analysis of engineers' and managers' perceptions and attitudes relative to retention systems. A total of seven issues were examined using the results gathered from a total of 120 COMMOG, AEROG, and GOVTG engineers (40 each) and interviews conducted with managers from the same three organizations. The Questionnaire (see Appendix A) consisted of 54 items, 13 associated with demographics so that the group(s) could be sub-categorized by age, education, etc. and 41 items which solicited quantitative and qualitative responses. The 41 questions were designed to ultimately make it possible to evaluate or answer 3 hypotheses and 4 questions that were of special interest to the authors. These hypotheses and questions are listed below and each in-turn is the subject of one section of this chapter.

Question: How well do engineers understand their retention systems?

Question: Do engineers perceive that reductions-in-force have a negative impact on the individual and the organization in terms of motivation and productivity?

Question: How do engineers perceive the effectiveness of communications?

Question: How do engineers perceive the fairness of their retention systems?

Hypothesis: Engineering attitudes relative to their retention system differ with special interests (e.g. by age, by degree of personal impact by the system, and, in the GOVTG sample, by veteran status).

Hypothesis: Engineers share a common philosophy with respect to retention system criteria.

Hypothesis: Engineers tend to leave the organization (transfer, quit, or retire) rather than face adverse action.

A. Familiarity

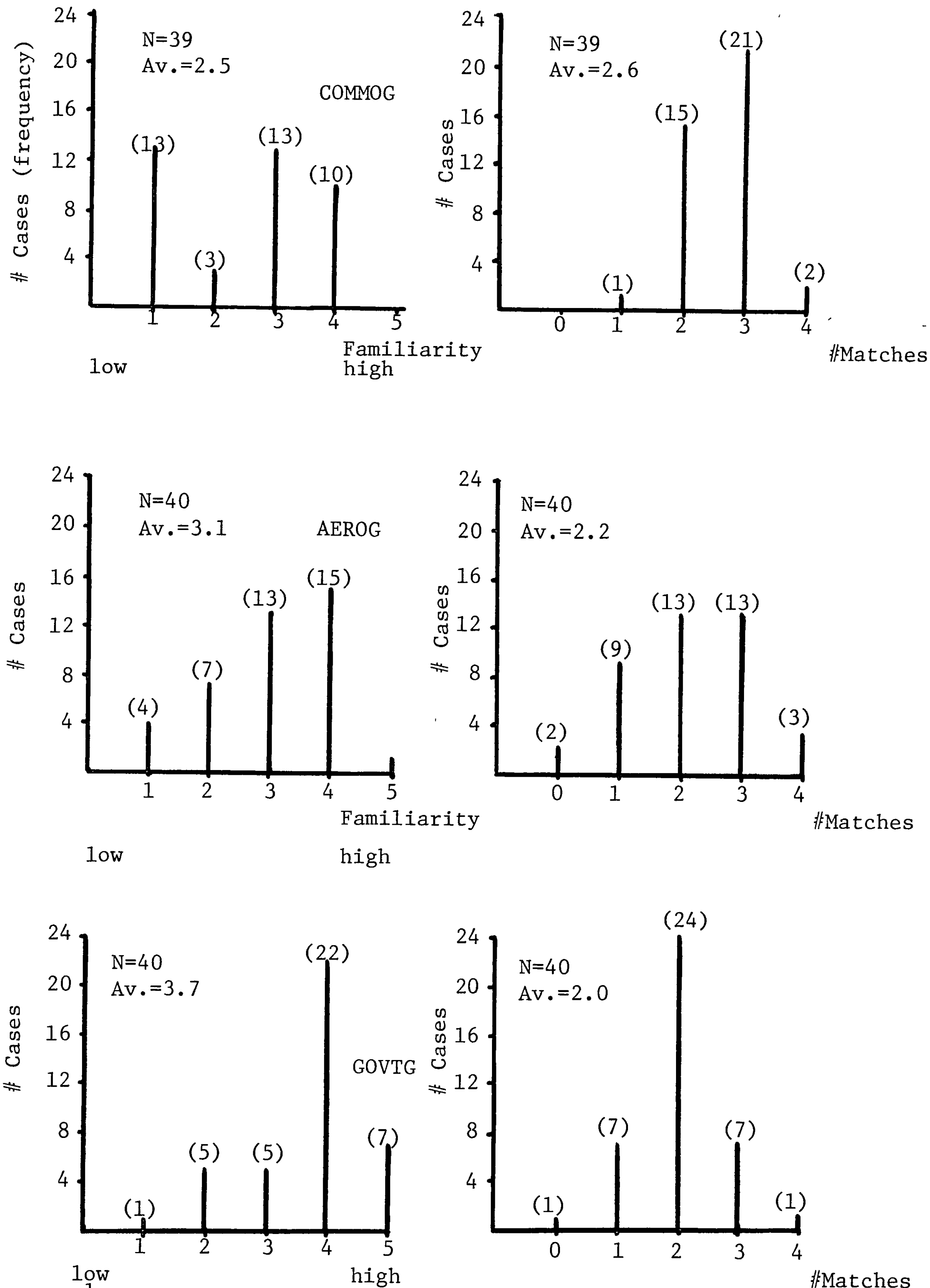
1. Question: How well do engineers understand their retention systems?

2. Approach: In order to analyze how familiar the engineers were with their retention systems, the various responses to the questionnaire were used singly or in pairs via cross tabulation techniques. Management views will be inserted where appropriate.

3. Analysis and results: Item #16 of the questionnaire was the pivotal vehicle of analysis in this exercise. Specifically, the question is asked: "To what extent are you familiar with the evaluation criteria of your retention system?" The histograms for COMMOG, AEROG, and GOVTG are given in Figure 4 under "a" Familiarity. It can be concluded from this figure that the GOVTG engineers are the most familiar with their retention system whereas the COMMOG group are the least familiar. This can be explained, to a large extent, by the fact that the GOVTG retention system has been reduced to written form in significant detail whereas much less written information is available in the other two cases. In fact, it is

FIGURE 4 FAMILIARITY AND CRITERIA MATCH HISTOGRAMS

(a) FAMILIARITY (b) CRITERIA MATCH[1]




[1]Criteria match equals number of retention criteria in top four selections that are the same as one of the actual top four as postulated by agency involved.

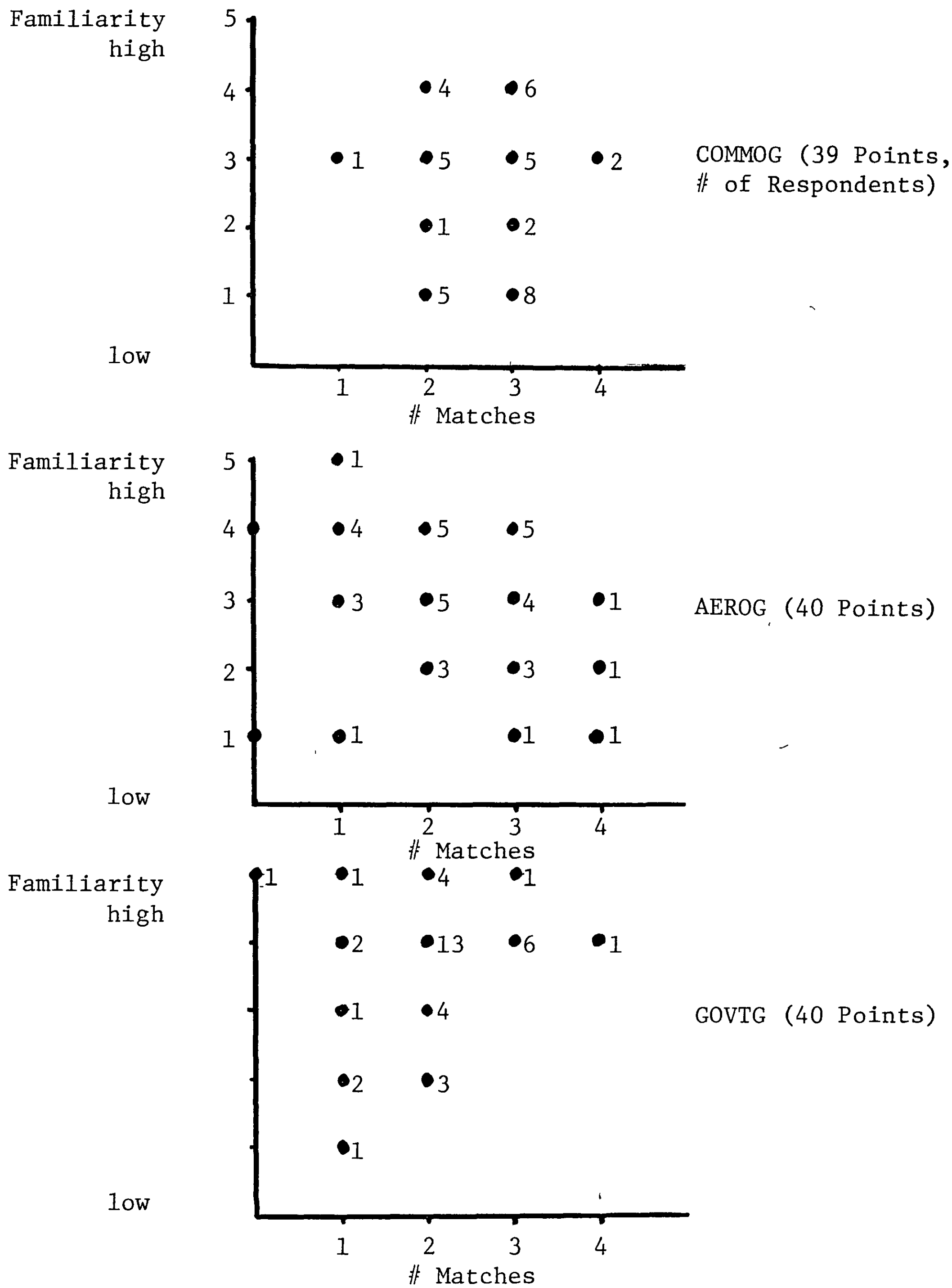
interesting to note the high number of "have read" cases in the AEROG analysis. This is, of course, highly unlikely since little is published and even that information is not generally available.

In order to understand more about the obvious spread in the responses to the familiarity question, a cross-tabulation was run between familiarity (Question 16) and "Criteria Match." The "Criteria Match" data was developed on the basis of the number of matches in the top four retention criteria (Question 15) between each case (Questionnaire) and the "official" criteria (disregarding order) for each agency. The "official" retention criteria order for GOVTG was obtained from the Civilian Personnel Office implementation of Civil Service Regulations and differed somewhat from the GOMGT perceptions. In the cases of COMMOG and AEROG, the current retention criteria rank orders used were those obtained from the management interviews made during the field trips.

The frequency histograms for the number of criteria matches are shown in Figure 4 under "b." It is interesting to note that COMMOG has the largest average number of matches (2.6) whereas GOVTG has the lowest (2.0). This is just the inverse of what one would expect after the results obtained on the familiarity question. These results indicate that the COMMOG engineers know their system better than they are willing to admit and that the GOVTG personnel are overly optimistic concerning their understanding of their system.

The cross-tabulation of "familiarity" vs. "criteria match" is displayed in scattergram form as Figure 5. There appears to be

FIGURE 5 FAMILIARITY VS. MATCH CRITERIA SCATTERGRAMS

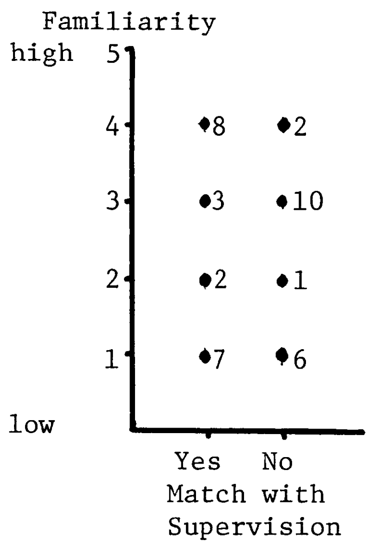



Note: The numbers beside each data point indicate frequency occurrence ex: 8 COMMOG engineers matched 3 of the top 4 rating criteria actually used by COMMOG and indicated they had a low familiarity with the COMMOG retention system.

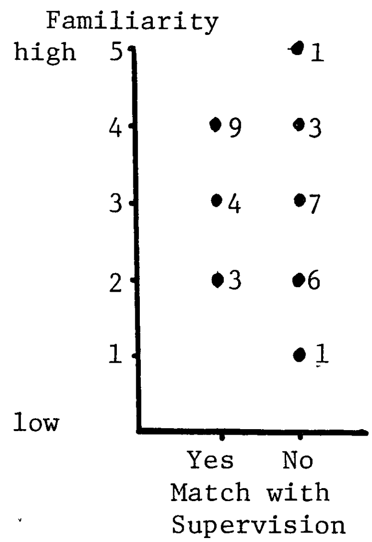
little linear correlation between one's stated familiarity with the retention system and the ability to list the top four "official retention" criteria.

In order to gain a better insight into COMMOG and AEROG, a cross tabulation was run between familiarity (Question 16) and "match with supervision" (Question 25). The results are given in Figure 6a. From these data we see that in the cases of COMMOG and AEROG there is little correlation between one's having the same perception of the retention system as supervision and having a high degree of familiarity of the system, and vice versa. GOVTG was not included in this exercise since, (1) their system is extensively published and (2) the retention system for the engineer and the one for management are one and the same in GOVTG. Therefore, the perceptions should quite naturally match between the engineer and supervision in this case.

One other anomaly was evidenced: on reference to Figure 4, under "a" we see that the COMMOG frequency plot on familiarity is definitely bimodal with one peak at "somewhat to generally familiar" (57.5%) and a second at "unfamiliar" (32.5%). In an attempt to explain this peculiarity, questions 16 (familiarity), 21 (uniformity) and 26 (performance appraisal accuracy) of the COMMOG questionnaires were analyzed collectively. It was suspected that second order motivations might be at work. In fact this was discovered to be the case. Of the 13 individuals who checked "unfamiliar," 62% felt that the retention system was not uniformly applied across all organizations whereas in the balance of the COMMOG sample, only 48%



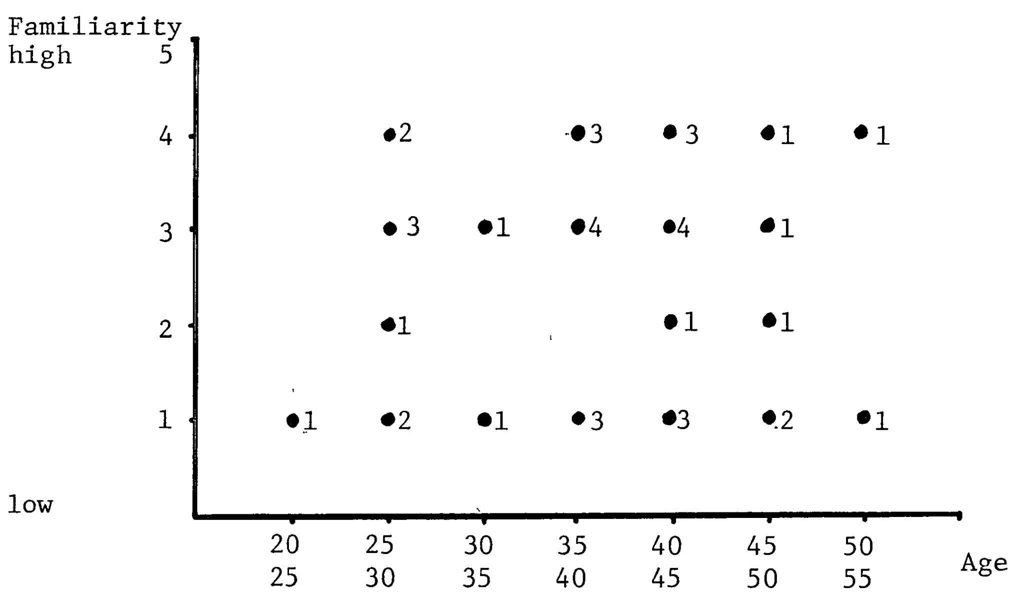

(1) COMMOG




(2) AEROG

Note: Numbers beside each data point indicate frequency of occurrence. Ex: 7 COMMOG engineers who felt they shared a common understanding of their retention system with their supervisors claimed to have low familiarity with the COMMOG retention system.

FIGURE 6a FAMILIARITY VS. MATCH WITH SUPERVISION




Note: Numbers beside each data point indicate frequency of occurrence. Ex.: 3 COMMOG engineers aged 35 to 40 claimed to have a low familiarity with respect to the COMMOG retention system.

FIGURE 6b FAMILIARITY VS. AGE SCATTERGRAMS-COMMOG felt there was mis-application. Also, 62% of these same 13 felt that the performance appraisal was not generally accurate as compared to 41% negative response to the same question in the balance of the sample. From these analyses it can be inferred that the "unfamiliar" response to question 16 was an emotional reaction to possibly witnessing events during retrenchment that they did not fully agree with and thus felt frustrated.

In addition to the above, those previously affected by adverse action versus those who were not were analyzed with respect to their familiarity with their retention systems. In this exercise the three sub-samples were joined into a composite group of 120 cases. The results revealed no significant difference in level of understanding between those who had received adverse action and those who had not. In addition, GOVTG was analyzed as a veteran-non-veteran basis. Although the sample was small (only 6 non-veterans) there nevertheless appeared to be a difference in degree of familiarity in favor of the veterans.

Finally, all three managements considered themselves to be generally familiar to conversant with their retention systems.

B. <u>Perception Correlation with Special Interests</u>

1. Hypothesis: Engineering attitudes toward their retention systems will differ by age, by degree of personal impact of the system, and, in the government sample, by veteran status.

2. Approach: In addition to the natural source division of the questionnaire data (which allowed comparison by group, industry versus government engineers' perceptions, composite perception versus group comparisons, and government engineer versus government management comparisons), segmentation of the sample data was accomplished by age, veteran status, and degree of individual impact by a retention system. The age division (under 40 was considered the younger group, 40 to 45 the mid-aged group, and over 45 the older group) was arranged to provide about equal sample sizes and to develop an understanding of how perceptions change as a function of one's career period. In the government sector only, the veteran and disabled veteran were lumped and their answers were compared with the non-veterans' to evaluate the difference in perceptions regarding retention from two levels of perceived vulnerability. Finally, the sample was divided into a group that had received previous adverse action and a group that had not to analyze the difference between answers based on "real" versus vicarious experiences. A sample question was chosen in which it was felt that there might be sensitivities attributable to the aforementioned divisions of data. Another, similarly-handled question is described in the Communications question paragraph (IIIE).

3. Results

a. Job Security

Table 13 of this section presents the results of the question "How do you rate your degree of job security in your present assignment

TABLE 13

JOB SECURITY RELATIVE TO COMPARABLE POSITION IN THE OTHER SECTOR-INDUSTRY OR GOVERNMENT (in Percent of Sample Size)

| | Sample Size | Response | | | | | Mean[1] |
|---|---|---|---|---|---|---|---|
| | | Much Lower | Somewhat Lower | About the Same | Somewhat Higher | Much Higher | |
| Sources | | | | | | | |
| Composite | 120 | 13.3 | 31.7 | 27.5 | 26.7 | 0.8 | 2.7 |
| AEROG | 40 | 20.0 | 40.0 | 30.0 | 10.0 | - | 2.3 |
| COMMOG | 40 | 2.5 | 22.5 | 32.5 | 42.5 | - | 3.2 |
| GOVTG | 40 | 17.5 | 32.5 | 20.0 | 27.5 | 2.5 | 2.7 |
| Personal Impact (Composite) | | | | | | | |
| Affected | 31 | 9.7 | 41.9 | 25.8 | 22.6 | - | 2.6 |
| Not Affected | 89 | 14.6 | 28.1 | 28.1 | 28.1 | 1.1 | 2.7 |
| Age Difference (Composite) | | | | | | | |
| Younger | 42 | 14.3 | 33.3 | 23.8 | 28.6 | - | 2.7 |
| Mid-Age | 35 | 17.1 | 28.6 | 25.7 | 28.6 | - | 2.7 |
| Older | 43 | 9.3 | 32.6 | 32.6 | 23.3 | 2.3 | 2.8 |
| Management Perception | | | | | | | |
| Aerospace[2] | 14 | - | - | - | 100 | - | 4.0 |
| Communications[2] | 17 | - | - | 100 | - | - | 3.0 |
| Government | 15 | 20.0 | 6.7 | - | 46.7 | 26.7 | 3.5 |
| Veteran Status (GOVTG) | | | | | | | |
| Veterans | 34 | 17.6 | 26.5 | 23.5 | 29.4 | 2.9 | 2.7 |
| Non-Veterans | 6 | 16.7 | 66.7 | - | 16.7 | - | 2.2 |

[1]The mean is calculated on assigning values 1 to 5 to the word scale, for example 2.5 would indicate an average feeling between "about the same" and "somewhat lower."

[2]Industry management perceptions are composites, compared with government management individual answers.

with respect to comparable other sector jobs?" Based on the sources comparison the Aerospace sample perceive themselves to be the least secure group. The Communications industry engineers feel the most secure. This could result from their distinctive age distribution (a preponderance of mid-aged engineers) or it may reflect the long-term, visible insecurity of the Aerospace industry. The personal impact comparison is less dramatic but those previously, adversely affected by a reduction-in-force appear somewhat less secure, as might be expected. Other than a slight increase in feeling of security by the older engineers, the perceptions appear similar for the various age groups. The government engineers appeared slightly bimodal and the age effect was checked for possible cause. It was not, however. The veteran and non-veteran differentiation did indicate strong differences (the veteran distribution being nearly flat, and the non-veteran's bimodal). While the latter is a small sample, it should not be overlooked. One consideration that may be a fact is that the non-veteran, being the more vulnerable, feels generally less secure.

b. A crosstabulation of the engineer's job security rating with whether he graduated from college or not yielded no statistically significant difference. Also evaluated was a crosstabulation of how those engineers who listed job security as a high priority goal perceived their job security.

| | Sample Size | Response (Percentage of Sample) Much Lower | Somewhat Lower | About the Same | Somewhat Higher | Much Higher | Mean |
|---|---|---|---|---|---|---|---|
| First Priority | 19 | 31.6 | 26.3 | 10.5 | 31.6 | - | 2.4 |
| Second Priority | 17 | 5.9 | 41.2 | 35.3 | 17.6 | - | 2.6 |
| Third Priority | 14 | 14.3 | 35.7 | 14.3 | 35.7 | - | 2.7 |
| Fourth Priority | 26 | 11.5 | 26.9 | 34.6 | 26.9 | - | 2.8 |

Those who listed job security as their number one career goal reflected, on the average, a perception of slightly less job security than their peers in the other sector. As the priority of the career goal issue decreases the perception approaches "about the same."

C. Common Retention Criteria Philosophy

1. Hypothesis: Engineers share a common philosophy with respect to ideal retention criteria.

2. Approach: In order to test this hypothesis, the actual rank ordered criteria (Question 15), the ideal rank ordered criteria (Question 52), and the perceptions of the three management groups were compared and conclusions drawn.

3. Analysis and results: The rank ordered ideal retention criteria for COMMOG, AEROG, GOVTG and the composite are given in Table 14 of this section. The 40 case and the 120 case samples (by group and composite response) were condensed to the simple rank

TABLE 14

IDEAL RETENTION SYSTEM CRITERIA BY PRIORITY (AS SEEN BY ENGINEERS)

| Priority | Composite | COMMOG | AEROG | GOVTG |
|---|---|---|---|---|
| 1. | Performance | Performance | Performance | Performance |
| 2. | Technical Competence | Technical Competence | Technical Competence | Technical Competence |
| 3. | Critical Skill | Critical Skill | Critical Skill | Seniority |
| 4. | Seniority | Seniority | Seniority | Critical Skill |
| 5. | Tenure with Organization | Current Assignment | Tenure with Organization | Implementation of Regulations |
| 6. | Current Assignment | Tenure with Organization | Current Assignment | Current Assignment |
| 7. | Implementation of Regulations | Other | Salary | Military Service Credit |
| 8. | Military Credit | Politics | Union Agreement | Tenure with Organization |
| 9. | Salary | Union Agreement | Implementation of Regulations | Salary |
| 10. | Union Agreement | Salary | Military Credit | Union Agreement |
| 11. | Politics | Implementation of Regulations | Politics | Politics |
| 12. | Other | Military Credit | Other | Other |

ordered lists shown by a linear weighting technique. The same information derived by the same weighting method for the present retention criteria is presented in Table 15. The present and ideal listings for the three management groups are displayed on Tables 16 and 17.

It can be seen from Table 14 that COMMOG and AEROG share identical views on their perception of an ideal retention system through the top 6 items with the minor sequence exception between items 5 and 6. GOVTG is also a relatively good match with the other two again through the first 6 items with the exception of the out of sequence condition between items 3 and 4 and the "Implementation of Federal and State Regulations" criteria which is not in the top 6 of the other two agencies.

It is interesting to compare the ideal top 6 in each case, i.e. by organization to the actual top 6 shown in Table 16. We see that, in the case of COMMOG, there are some significant differences. First, "performance" and "technical competence" are one and two in both the actual and ideal cases. However, "politics" (pull with management) plays a significant role in the actual system. Also, the COMMOG engineers would like to move "seniority" and "critical skill" up in the priority list in their ideal system.

In AEROG, we once again see "politics" playing a much bigger part in the present system as opposed to the ideal perception. The AEROG engineers would also like "current assignment" and "seniority" advanced in priority.

GOVTG is by far the most diverse between the present and the ideal perceptions. In the present system, "seniority" is number one in their view. They would like this replaced by "performance" in their ideal system. Also, they perceive "politics" to be number 3 in the current system. They want this criterion moved to number eleven! Finally, the GOVTG engineers view "military service credit" to be number 2 in the present system. Their ideal system moves this factor out of the top six! This "seniority"/military service credit de-emphasis is particularly interesting when one recognizes that the 40 case GOVTG sample contains a vast majority of high seniority veterans. This indicates that GOVTG would like to change their system to one similar to the two industrial companies even though significant protection is forgone. Also, it is significant to note that the GOVTG engineers want prime emphasis on "performance" and "technical competence."

From the actual versus ideal analysis it can be concluded that engineers do share a generally common philosophy with respect to retention criteria.

Another interesting exercise is to compare the management's perceptions with those of the engineers in the three agencies (ref.: Tables 15 and 16). In this exercise, only the first 5 priorities will be matched with the exception of GOVTG where 6 will again be used. This further truncation was necessary because of the different methodology in data acquisition between the managers and the engineers. First, in the case of COMMOG, management's perception of the present

TABLE 15

PRESENT RETENTION SYSTEM CRITERIA BY PRIORITY (AS SEEN BY ENGINEERS)

| Priority | Composite | COMMOG | AEROG | GOVTG |
|---|---|---|---|---|
| 1. | Performance | Performance | Performance | Seniority |
| 2. | Technical Competence | Technical Competence | Technical Competence | Military Service Credit |
| 3. | Seniority | Current Assignment | Critical Skill | Politics |
| 4. | Politics | Politics | Politics | Implementation of Regulations |
| 5. | Current Assignment | Critical Skill | Tenure with Organization | Current Assignment |
| 6. | Critical Skill | Seniority | Seniority | Critical Skill |
| 7. | Tenure with Organization | Tenure with Organization | Current Assignment | Performance |
| 8. | Military Credit | Salary | Salary | Technical Competence |
| 9. | Implementation of Regulations | Implementation of Regulations | Union Agreement | Tenure with Organization |
| 10. | Salary | Union Agreement | Implementation of Regulations | Union Agreement |
| 11. | Union Agreement | - | Other | Salary |
| 12. | Other | - | Military Credit | Other |

TABLE 16

PRESENT RETENTION CRITERIA[1] BY PRIORITY (AS SEEN BY MANAGEMENT)

| Priority | (1) COMMOG | (2) AEROG | (3) GOVTG "Actual" | (4) GOVTG MGT Perception |
|---|---|---|---|---|
| 1. | Performance | Performance | Seniority | Seniority |
| 2. | Tech. Comp. | Tech. Comp. | Mil. Serv. Credit | Mil. Serv. Credit |
| 3. | Critical Skill | Critical Skill | Curr. Assign. | Imp. Fed. and St. Regs. |
| 4. | Seniority | Curr. Assign. | Performance | Performance |
| 5. | Curr. Assign. | Seniority | Critical Skill | Critical Skill |
| 6. | | | Imp. Fed. and St. Regs. | Curr. Assign. |

[1]COMMOG and AEROG managements' perception of present retention criteria matches the actual criteria--GOVTG differs as shown in Columns 3 and 4.

TABLE 17

IDEAL RETENTION CRITERIA BY PRIORITY (AS SEEN BY MANAGEMENT)

| Priority | COMMOG | AEROG | GOVTG |
|---|---|---|---|
| 1. | Performance | Performance | Performance |
| 2. | Tech. Comp. | Tech. Comp. | Tech. Comp. |
| 3. | Critical Skill | Critical Skill | Politics |
| 4. | Seniority | Curr. Assign. | Seniority |
| 5. | Curr. Assign. | Seniority | Curr. Assign. |
| 6. | - | - | Critical Skill |

system does not compare well with the engineer's perceptions in that management does not see "politics" as being a factor and they see "seniority" as being less significant than do the engineers. Finally, it is significant to recognize that the COMMOG management present and ideal line-ups are identical and equal to the COMMOG engineers ideal list. What this would indicate is that, in the engineers view, if "politics" were de-emphasized and "seniority" more weighted, the COMMOG system would be close to ideal.

In AEROG, the present criteria match between management and engineer runs into the same difficulty as was true in COMMOG. The AEROG engineers see "politics" to be a more significant factor than does management. Also, the engineers see "seniority" playing a less significant and "tenure" playing a more significant part than does management. The AEROG management actual and ideal prioritized retention criteria lists are identical and equal to the AEROG engineers' list with the exception of the "tenure"/"current assignment" interchange. Once again, it would appear that if "politics" were minimized and "seniority" increased in importance (in the engineers' view), harmony would exist between management and engineering.

Before discussing the GOVTG management-engineer "fit" it is first necessary to mention that the GOVTG management perceived actual retention system criteria is slightly different than the criteria stacking actually employed by GOVTG. The two listings are given on Table 16 of this section. There appears to be a difference in perception in the "current assignment" and the "implementation of state and federal regulations" relative weighting. Given this fact we will continue this analysis in the paragraphs that follow.

First, "politics" is again perceived to be a significant criterion by the engineers whereas GOVTG management does not even consider it in the top 6 items. Also management sees "performance" playing a much larger role than do the engineers. In the ideal case, both management and engineers want "performance" and "technical competence" to be the number 1 and 2 criteria. However, GOVTG management want "politics" to be number 3 (even ahead of seniority) whereas the engineers want it excluded from the top 6. Finally, both groups want the "regulations implementation" factor dropped in priority in their ideal systems.

In summary, engineers share a common perception of an ideal retention system. They want the politics removed from their systems. Management in all three cases does not recognize or will not admit to politics in their present systems. COMMOG and AEROG engineers want to see more weighting on seniority whereas GOVTG wants a de-emphasis. In the cases of COMMOG and AEROG, the management-engineer matches on the ideal system are striking. In the GOVTG case, the match is very good except for the political issue.

D. Morale and Productivity

1. Question: Do engineers perceive that reduction-in-force have a negative impact on the individual and the organization in terms of motivation and productivity?

2. Approach: An engineer's status in terms of morale and productivity in a retrenchment environment is a complex result of many issues (e.g. native ability; perceived vulnerability; personality traits; observed fairness in the system rewards or sanctions which his employer provides for occupational performance; equitable hiring and firing practices; the degree of flexibility which management has in adjusting the workforce and the bias or arbitrariness he perceives in that adjustment; and the type and timeliness of communication between management and employees). The questionnaire did not contain specific questions seeking an assessment of each engineer's morale and productivity status because it was felt that his response would be biased toward "good" in much the same way that our natural response to the social question "How are you?" would be "Great!" regardless of fact. There are, however, a number of responses that, when compiled and compared, can provide insight into these issues. These include:

a. Question 22a. through h. which cover the perceived vulnerability of the engineer as a result of age, experience (or lack of it), currentness of education, geographical constraints, family considerations, desire to avoid tenure interruptions, and the viability or dead-endedness of his job.

b. Questions 26, 27, and 49 which ask for the engineer's assessment of the fairness (accuracy) of their performance appraisals, the extent to which promotions in their organizations are merited, and the number of awards made for exemplary performance which are deserved.

c. Question 18 which addresses the equity of the engineer's retention system is central to the issue, and is covered separately in paragraph F.

d. Questions 20, 21, 23, 24, and 31 through 34 which cover the extent of management flexibility in implementation of personnel reductions from the standpoint of organizational balance between performance and personal protection; uniform or consistent application of the retention system; management flexibility in applying the retention constraints; the extent of management intervention in preserving key personnel, jobs, or functions; and consideration of various minority groups (including women, older, and higher salaried employees).

e. Question 29 and 30a., f, and g which address the type of communication perceived between management and engineers during reductions-in-force, and the impact of extended layoff notice on morale, near- and long-term productivity.

f. Since many of the above questions are answered by yes or no, a figure of comparison will be employed which lists the answer which provides improved morale and productivity as a "plus," decreases as a "minus," and failure to answer as "indifferent." In those questions where answers are on a scale of from 1 to 5, they will be constrained (with some justification) into these three categories.

3. Results

a. Perceived Vulnerability - Question 22a. through h. are answered in one of five categories, depending on the perceived feeling of entrapment or vulnerability ranging from Not At All and Barely (a "plus") through Somewhat (taken as Indifferent) to Considerable or Very (which is herein considered a "minus"). Table 18 presents the results of the vulnerability question "To what extent do you feel 'trapped' or immobile in the present retention system by age, lack of experience, out-of-date education, geographic constraints, family considerations, tenure interruptions, dead-end jobs, or others?" The "Other" results are considered as statistically insignificant. Lack of experience and out-of-date education impose no major perceived constraints on engineer's mobility, but age, geographic constraints, family considerations, tenure interruptions, and, particularly, dead-end jobs do. This is reflected in the government sample by retention system improvements comments which suggest broadening the competitive area of a force reduction to the geographic commuting area.

b. Observed Fairness - Table 19 presents the results of the question "Are performance appraisals generally accurate?" (Yes answers are taken to be positive indicators of morale/ productivity.) It also shows the percentage of those who felt that promotions were deserved to some extent. (None was taken to be a Minus, All a Plus, and intermediate answers were treated as Indifferent.) Finally, the extent of deserved performance awards

TABLE 18

THE ENGINEER'S PERCEIVED VULNERABILITY (ENTRAPMENT) IN THE RETENTION SYSTEM (IN PERCENT)

| Vulnerability Caused By | Morale/Productivity Impact | | |
|---|---|---|---|
| | Plus | Indifferent | Minus |
| Age | 53.3 | 29.2 | 16.6 |
| Lack of Experience | 77.0 | 16.7 | 5.8 |
| Out-of-date Education | 75.0 | 18.3 | 6.6 |
| Geographic Constraints | 57.5 | 22.5 | 18.3 |
| Family Considerations | 57.5 | 26.7 | 15.9 |
| Tenure Interruptions | 66.7 | 13.3 | 19.2 |
| Dead-end Jobs | 52.5 | 18.3 | 28.3 |
| Other | 1.7 | 82.5 | 15.8 |

TABLE 19

OBSERVED FAIRNESS IN PERSONNEL REWARDS AND SANCTIONS (IN PERCENT)

| Personnel Action | Morale/Productivity Impact | | |
|---|---|---|---|
| | Plus | Indifferent | Minus |
| Performance Appraisal Accuracy | | | |
| (Composite) | 40.8 | 0.8 | 58.3 |
| (GOVTG) | 17.5 | 0 | 82.5 |
| Promotions Deserved | 0.8 | 99.2 | 0 |
| Awards Deserved | | | |
| (Composite) | 35 | 45 | 20 |
| (GOVTG) | 30 | 42 | 27.5 |

is summarized. (Most and All are considered Plus, Some as Indifferent, and None and A Few as Minus.) Promotion fairness certainly does not appear to be a factor. The awards results are inconclusive. This may result from the different use which the Government makes of performance awards with respect to Industry. In the former a current Outstanding Performance Award adds four years to seniority, and therefore retainability. The GOVTG sample shows a slightly lower morale/productivity effect than the Industry samples. On the other hand the performance appraisal category shows an even more marked difference between Government and Industry samples. Both AEROG and COMMOG select the employees to be retained in a RIF by performance, the Government does not. Correspondingly the Industry engineers feel much better about their appraisal systems than do Government engineers. Therefore, one of the government management tools is detracting from morale and productivity.

Table 20 presents another indicator of the engineer's perception of his retention system fairness. In Questions 14 and 15 there is, in the list of candidate retention criteria, an entry "Politics (Pull With Management)." It is felt that if this entry is included in the top five ranked present retention criteria, that morale and productivity would be impacted in a negative way. If in the lower five, the impact was felt to be favorable, and if not included, indifference was assumed. The results are particularly interesting in comparison with management's perceptions on the subject. Sixty percent of Government management did not include politics as a criteria,

TABLE 20

POLITICS IN RETENTION CRITERIA (IN PERCENT)

| Politics Rank in Retention Criteria | Morale/Productivity Impact | | |
|---|---|---|---|
| | Plus | Indifferent | Minus |
| Composite | 18.3 | 28.3 | 53.4 |
| GOVTG | 17.5 | 27.5 | 55 |
| GOMGT | 20 | 60 | 20 |

TABLE 21

MANAGEMENT FLEXIBILITY IN APPLYING RETENTION CRITERIA (IN PERCENT)

| Parameter | Morale/Productivity Impact | | |
|---|---|---|---|
| | Plus | Indifferent | Minus |
| Management Intervention Warranted | 80.8 | 2.5 | 16.7 |
| Extent of Management Constraint in Applying Procedures | 9.3 | 78.4 | 8.3 |
| Balance of Performance with Personal Protection | 40.8 | 7.5 | 51.7 |
| Uniform Application of Retention System | 36.7 | 5 | 58.3 |

while 55% of the GOVTG engineers listed it in the top five criteria, with a minus morale/productivity impact likely. Surely there is a lesson there in improving either the understanding of the system or its implementation (or both).

c. Management Flexibility - Table 21 depicts the Questionnaire results which relate to management flexibility in applying the retention criteria. The use of management intervention to protect key personnel, jobs, or functions is assessed. (An answer indicating that it is warranted is interpreted as a Plus for morale and productivity.) The composite results appear to favor intervention, which is interesting considering the negative connotation intended for Politics. The extent of management constraint in applying the retention procedures was considered neither rigid nor unconstrained, so it probably has only a small effect on morale and productivity. The engineers are nearly equally divided on their opinions of the correctness of the balance between organizational performance and personnel protection. (Likewise these are not strong predictors.) Finally the composite sample expressed a preference for the non-uniform balance answer, indicating a slight negative impact for uneven implementation of the retention system.

Table 22 records the results of Questions 31 through 34. Considerable difficulty was experienced in analyzing the data because, a large percentage of the sample chose to externalize their answers. A number of the answers were voided to get a group of responses reflecting the intended questions. Nonetheless there appears to be no sizeable adverse morale or productivity effects due to excessive minority or women impacts in retrenchment. There does appear to be more of a case for problems due to older and higher-salaried employees, however. (AEROG considers salary in its retention process, and GOVTG is normally constrained to maintain a fixed average GS level.) Table 23 addresses the results of the GOVTG answers to the questions on Bumping and Transitioning. (An answer to the effect that the action impact on productivity is justified by personnel retention considerations is considered a Plus.) The GOVTG sample favors the two procedures, but Government Management has the inverse opinion (probably as a result of perceived organizational ineffectiveness caused by multiple reassignments--the learning curve effect on productivity).

d. Communications--Two questions, relating to the effect of communications type and timeliness in a reduction in force environment, are described in Tables 25, 26 and 27.

(1) Table 24 characterizes the type of communication into three categories: Plus for morale and productivity exemplified by the Bilateral, Formal, but Informative answer; Minus for the Unilateral and Bilateral but Superficial answers; and the remainder as Indifferent. There appears to be a distinct negative impact by the communications type on morale and productivity.

(2) Table 25 summarizes the results, by source, extent of personal impact, age differences, and veteran status for the engineers and summary management positions for the impact of long

TABLE 22

MINORITY IMPACTS BY THE RETENTION SYSTEM (IN PERCENT)

| More Impact On | Morale/Productivity Impact | | |
|---|---|---|---|
| | Plus | Indifferent | Minus |
| Minorities | 75.8 | 14.2 | 10 |
| Women | 63.3 | 26.7 | 10 |
| Older Employees | 37.5 | 26.7 | 35.8 |
| Higher Paid Employees | 50.8 | 28.3 | 20.8 |

TABLE 23

GOVTG BUMPING AND TRANSITIONING PRACTICE IMPACTS (IN PERCENT)

| | Morale/Productivity Impact | | |
|---|---|---|---|
| | Plus | Indifferent | Minus |
| Bumping (GOVTG) | 62.5 | 10 | 27.5 |
| (GOMGT) | 40 | - | 60 |
| Transitioning (GOVTG) | 62.5 | 22.5 | 15 |
| (GOMGT) | 40 | - | 60 |

TABLE 24

TYPE COMMUNICATIONS IMPACT ON MORALE AND PRODUCTIVITY (IN PERCENT)

| | Morale/Productivity Impact | | |
|---|---|---|---|
| | Plus | Indifferent | Minus |
| Type Communication | 17.5 | 37 | 45.5 |

TABLE 25

WARNING TIME (NOTICE OF IMPENDING RIF) IMPACT ON MORALE COMPARISON (IN PERCENT)

| Sample | Response | | | | | Mean[1] | Size |
|---|---|---|---|---|---|---|---|
| | None | A Little | Some | Consid-erable | Much | | |
| Sources | | | | | | | |
| Composite | 0.8 | 5.0 | 26.8 | 46.2 | 21.0 | 3.8 | 119 |
| COMMOG | - | - | 7.5 | 62.5 | 30.0 | 4.2 | 40 |
| AEROG | - | 12.8 | 41.0 | 38.5 | 7.7 | 3.3 | 39 |
| GOVTG | 2.5 | 2.5 | 32.5 | 37.5 | 25.0 | 3.8 | 40 |
| Personal Impact (Composite) | | | | | | | |
| Affected | - | 6.7 | 20.0 | 50.0 | 23.3 | 3.9 | 30 |
| Not Affected | 1.1 | 4.5 | 29.2 | 44.9 | 20.2 | 3.3 | 89 |
| Age Difference (Composite) | | | | | | | |
| Younger | - | 7.1 | 23.8 | 45.2 | 23.8 | 3.9 | 42 |
| Mid-Aged | 2.9 | 2.9 | 29.4 | 52.9 | 11.8 | 3.7 | 34 |
| Older | - | 4.7 | 27.9 | 41.9 | 25.6 | 3.9 | 43 |
| Management Perceptions | | | | | | | |
| Aerospace[2] | - | - | - | 100.0 | - | 4.0 | 14 |
| Communications[2] | - | - | - | 100.0 | - | 4.0 | 17 |
| Government | - | 6.7 | 20.0 | 40.0 | 33.3 | 4.0 | 15 |
| Veteran Status (GOVTG) | | | | | | | |
| Veterans | 2.9 | 2.9 | 26.5 | 38.2 | 29.4 | 3.9 | 34 |
| Non-Veterans | 16.7 | - | 50.0 | 33.3 | - | 3.0 | 6 |

[1]The mean is calculated by assigning values 1 to 5 to the word scale.

[2]Industry management perceptions are composites, compared with Government management, which are individual answers.

TABLE 26

WARNING TIME IMPACT ON NEAR-TERM PRODUCTIVITY COMPARISON
(IN PERCENT OF SAMPLE SIZE)

| Sample | Response | | | | | Mean[1] | Size |
|---|---|---|---|---|---|---|---|
| | None | A Little | Some | Consid-erable | Much | | |
| Sources | | | | | | | |
| Composite | 0.9 | 13.8 | 22.4 | 36.2 | 26.7 | 3.6 | 116 |
| COMMOG | - | 5.1 | 12.8 | 51.3 | 30.8 | 4.1 | 39 |
| AEROG | 2.6 | 18.0 | 36.8 | 28.9 | 10.7 | 3.2 | 37 |
| GOVTG | - | 17.5 | 17.5 | 27.5 | 37.5 | 3.9 | 40 |
| Personal Impact (Composite) | | | | | | | |
| Affected | - | 13.3 | 30.0 | 43.3 | 13.3 | 3.6 | 30 |
| Not Affected | 1.2 | 14.0 | 19.8 | 33.7 | 31.4 | 3.8 | 86 |
| Age Difference (Composite) | | | | | | | |
| Younger | 2.4 | 14.6 | 19.5 | 41.5 | 22.0 | 3.7 | 41 |
| Mid-Aged | - | 9.4 | 25.0 | 43.8 | 21.9 | 3.8 | 32 |
| Older | - | 16.3 | 23.3 | 25.6 | 34.9 | 3.8 | 43 |
| Management Perception | | | | | | | |
| Aerospace[2] | - | - | - | 86.0 | 14.0 | 4.1 | 14 |
| Communications[2] | - | - | - | 100.0 | - | 4.0 | 17 |
| Government | - | 6.7 | 20.0 | 46.7 | 26.7 | 3.9 | 15 |
| Veteran Status (GOVTG) | | | | | | | |
| Veteran | - | 14.7 | 14.7 | 29.4 | 41.2 | 4.0 | 34 |
| Non-Veteran | - | 33.3 | 33.3 | 16.7 | 16.7 | 2.5 | 6 |

[1]The mean is calculated by assigning values 1 to 5 to the word scale, e.g. 2.5 would indicate an average feeling between "A Little" and "Some."

[2]Industry management perceptions are composites, compared with Government management, which are individual answers.

TABLE 27

WARNING TIME IMPACT ON LONG-TERM PRODUCTIVITY COMPARISON
(IN PERCENT OF SAMPLE SIZE)

| Sample | Response | | | | | Mean[1] | Size |
|---|---|---|---|---|---|---|---|
| | None | A Little | Some | Consid-erable | Much | | |
| Sources | | | | | | | |
| Composite | 0.9 | 29.1 | 33.3 | 18.8 | 0.9 | 2.8 | 117 |
| COMMOG | 7.7 | 20.5 | 56.4 | 10.3 | 5.1 | 2.9 | 39 |
| AEROG | 15.8 | 44.8 | 18.4 | 21.0 | - | 2.5 | 38 |
| GOVTG | 5.0 | 22.5 | 25.0 | 25.0 | 22.5 | 3.4 | 40 |
| Personal Impact (Composite) | | | | | | | |
| Affected | 10.0 | 33.3 | 33.3 | 23.3 | - | 2.7 | 30 |
| Not Affected | 9.2 | 27.6 | 33.3 | 17.2 | 12.6 | 3.0 | 87 |
| Age Difference (Composite) | | | | | | | |
| Younger | 9.5 | 31.0 | 40.5 | 11.9 | 7.1 | 2.8 | 42 |
| Mid-Aged | 6.3 | 40.6 | 34.4 | 9.4 | 9.4 | 2.8 | 32 |
| Older | 11.6 | 18.6 | 25.6 | 32.6 | 11.6 | 3.1 | 43 |
| Management Perception | | | | | | | |
| Aerospace[2] | - | 43.0 | 57.0 | - | - | 2.6 | 14 |
| Communications[2] | - | 100.0 | - | - | - | 2.0 | 17 |
| Government | 13.3 | 33.3 | 20.0 | 20.0 | 13.3 | 2.9 | 15 |
| Veteran Status (GOVTG) | | | | | | | |
| Veterans | 5.9 | 20.6 | 23.5 | 23.5 | 26.5 | 3.4 | 34 |
| Non-Veterans | - | 33.3 | 33.3 | 33.3 | - | 3.0 | 6 |

[1]The mean is calculated by assigning values 1 to 5 to the word scale, e.g. 2.5 would indicate an average feeling between "A Little" and "Some."

[2]Industry management perceptions are composites, compared with Government management, which are individual answers.

warning times for RIF's on morale. It appears to affect COMMOG the most, there seems to be little differentiation of opinion with respect to age, whether the engineer had previously been affected or not, or veteran status. It is noted that the managements of all three areas see more impact on morale than do the engineers (a possible overemphasis?).

(3) Table 26 summarizes, in the same format, the impact of long warning times on near-term productivity. Likewise Table 27 which shows the perceived impact on long-term productivity. Little discrimination is evident in the previously-mentioned sub-categories, except that:

(a) There is more short-term productivity effect perceived than long term.

(b) AEROG seems less affected on both long- and near-term bases than do the other two sources.

(c) GOVTG shows somewhat more near-term and considerably more long-term productivity effect than do the other sources.

(d) The older engineers perceive more long-term effect on productivity than do the younger or mid-aged. This is in consonance with the (c) statement above, since the GOVTG age distribution is skewed toward the older ages.

e. Regression Analysis of MORALE, PRON, and PROL--A number of variables related to the general concept of morale and productivity were selected for multiple, step-by-step regression analysis. They included:

(1) Warning time, i.e., notice of impending RIF, effect on morale (MORALE)

(2) Warning time effect on near-term productivity (PRON)

(3) Warning time effect on long-term productivity (PROL)

(4) Performance appraisal accuracy (PERAP)

(5) Extent of promotions deserved (PROMO)

(6) Dead-end job impact on mobility or vulnerability (JOB)

(7) Previous effect on respondent by RIF (GRIND)

(8) Perceived extent of management constraint in following the prescribed layoff procedures (CONSTR)

(9) Engineer's perceived understanding of his retention system (KNOW)

(10) Relative job security (JOBSEC)

(11) Displacement of junior by more senior employees in the same job classification (BUMP)

(12) Displacement of junior by more senior employees across job classifications (TRANST).

Table 28 uses PRON as the dependent variable and demonstrates significant positive correlation between near-term productivity and both morale and long-term productivity. While the other variables are statistically significant, there is little to be gained additionally in coefficient of determination ($R^2$) by including them in the regression equation. Table 29 lists PROL as the dependent variable and include several additional variables. Again, near- and long-term productivity correlate, as does the new variable JOB. (The latter appears to be a separate issue resulting from demoralization at the perceived inability to advance, rather than as a result of adverse action.) Table 30 reflects a step-by-step regression using the GOVTG sample to evaluate the dependent variable MORALE against the variables BUMP and TRANST. It is interesting that the transitioning issue correlates negatively with MORALE. This agrees with the GOVTG respondents indicating dissatisfaction with the "qualification technique" used in the government to select, through minimum standards, who is able to transition from one competitive level to another. As a cross-check, Tables 31 and 32 delineate PRON and PROL as dependent variables for the GOVTG sample. The correlation between MORALE, PRON, and PROL is again apparent. TRANST is inversely correlated, and GRIND is slightly correlated.

f. Summary of Composite Morale and Productivity Indicators. Table 33 recapitulates and summarizes the variables felt to be morale and productivity indicators, as described in preceding paragraphs a through e above. Items in the Plus column are seen to have "good" morale and productivity effects, the Minus items were "bad," and those in the "0" column were either felt to be no indicator or indifference. The percentages of the earlier tables were decimalized and summed (excluding the dependent variable from its own average value calculation). The results infer ambivalent feeling by the

TABLE 28

CORRELATION COEFFICIENTS/F-TESTS FOR MORALE AND PRODUCTIVITY REGRESSION ANALYSIS--PRON

| | PRON | PROL | MORALE | PERAP | PROMO | JOB |
|---|---|---|---|---|---|---|
| PRON | 1.00000 | 0.67497 | 0.57148 | 0.14059 | 0.10013 | 0.11432 |
| PROL | | 1.00000 | 0.37387 | 0.15297 | 0.08739 | 0.22507 |
| MORALE | | | 1.00000 | 0.05261 | 0.15070 | -0.07225 |
| PERAP | | | | 1.00000 | 0.16750 | 0.29701 |
| PROMO | | | | | 1.00000 | 0.05387 |
| JOB | | | | | | 1.00000 |

| PRON WITH: | $R^2$ | Std. Error | F-Value | For $\alpha$=.05 F = |
|---|---|---|---|---|
| PROL | .45558 | .90206 | 98.74422 | 3.92 |
| MORALE | .57397 | .80137 | 78.81530 | 3.15 |
| PERAP | .57553 | .80334 | 52.42815 | 2.62 |
| JOB | .57565 | .80672 | 39.00074 | 2.45 |
| PROMO | .55713 | .81017 | 30.94006 | 2.29 |

TABLE 29

CORRELATION COEFFICIENTS/F-TESTS FOR MORALE AND PRODUCTIVITY REGRESSION ANALYSIS--PROL

| | PROL | PRON | PERAP | GRIND | CONSTR | JOB |
|---|---|---|---|---|---|---|
| PROL | 1.00000 | 0.67497 | 0.15297 | 0.10601 | 0.15709 | 0.22507 |
| PRON | | 1.00000 | 0.14059 | 0.08035 | 0.05790 | 0.11432 |
| PERAP | | | 1.00000 | -0.00652 | 0.05560 | 0.29701 |
| GRIND | | | | 1.00000 | -0.04200 | -0.02739 |
| CONSTR | | | | | 1.00000 | -0.05394 |
| JOB | | | | | | 1.00000 |

| PROL WITH: | $R^2$ | Std. Error | F-Value | For $\alpha$=.05 F |
|---|---|---|---|---|
| PRON | .45558 | .87863 | 98.74422 | 3.92 |
| JOB | .47775 | .86423 | 53.51482 | 3.15 |
| CONSTR | .49401 | .85432 | 37.75170 | 2.62 |
| GRIND | .49809 | .85456 | 28.53108 | 2.45 |
| PERAP | .49816 | .85824 | 22.63279 | 2.29 |

TABLE 30

CORRELATION COEFFICIENTS/F-TESTS FOR MORALE AND PRODUCTIVITY REGRESSION ANALYSIS--MORALE (GOVTG)

| | MORALE | PROMO | JOB | BUMP | TRANST | GRIND | CONSTR |
|---|---|---|---|---|---|---|---|
| MORALE | 1.00000 | 0.19156 | 0.15236 | -0.15282 | -0.51277 | 0.18677 | 0.16875 |
| PROMO | | 1.00000 | -0.04686 | -0.00158 | -0.02037 | -0.21977 | -0.25224 |
| JOB | | | 1.00000 | 0.05449 | -0.06959 | 0.13905 | 0.45568 |
| BUMP | | | | 1.00000 | -0.01796 | -0.10766 | 0.02997 |
| TRANST | | | | | 1.00000 | -0.20851 | -0.19858 |
| GRIND | | | | | | 1.00000 | 0.02442 |
| CONSTR | | | | | | | 1.00000 |

| MORALE WITH: | $R^2$ | Std. Error | F-Value | For $\alpha$=.05 F= |
|---|---|---|---|---|
| TRANST | .26293 | .81685 | 13.55576 | 4.08 |
| PROMO | .29575 | .80917 | 7.76904 | 3.23 |
| BUMP | .32190 | .80496 | 5.69639 | 2.92 |
| JOB | .34004 | .80539 | 4.50836 | 2.69 |
| GRIND | .34848 | .81109 | 3.63713 | 2.53 |
| CONSTR | .35591 | .81940 | 3.03912 | 2.42 |

TABLE 31

CORRELATION COEFFICIENTS/F-TESTS FOR MORALE AND PRODUCTIVITY REGRESSION ANALYSIS--PRON (GOVTG)

| | PRON | MORALE | PROL | GRIND | BUMP | TRANST | JOB |
|---|---|---|---|---|---|---|---|
| PRON | 1.00000 | 0.48178 | 0.60761 | 0.13028 | -0.90593 | -0.15212 | 0.16883 |
| MORALE | | 1.00000 | 0.36015 | -0.18677 | -0.15282 | -0.51277 | -0.15236 |
| PROL | | | 1.00000 | 0.18078 | -0.05839 | -0.22617 | 0.39381 |
| GRIND | | | | 1.00000 | 0.10766 | 0.20851 | 0.13905 |
| BUMP | | | | | 1.00000 | -0.01796 | -0.05449 |
| TRANST | | | | | | 1.00000 | 0.06959 |
| JOB | | | | | | | 1.00000 |

| PRON WITH: | $R^2$ | Std. Error | F-Value | For $\alpha$=.05 F= |
|---|---|---|---|---|
| PROL | .36919 | .90281 | 22.24044 | 4.08 |
| MORALE | .44864 | .85538 | 15.05337 | 3.23 |
| TRANST | .46682 | .85276 | 10.50662 | 2.92 |
| GRIND | .47360 | .85934 | 7.87243 | 2.69 |
| PRON | .47404 | .87152 | 6.12884 | 2.53 |

TABLE 32

CORRELATION COEFFICIENTS/F-TESTS FOR MORALE AND PRODUCTIVITY REGRESSION ANALYSIS--PROL (GOVTG)

| | PROL | PRON | MORALE | GRIND | TRANST | JOB |
|---|---|---|---|---|---|---|
| PROL | 1.00000 | 0.60761 | 0.36015 | 0.18078 | -0.22617 | 0.39381 |
| PRON | | 1.00000 | 0.48178 | 0.13028 | -0.15212 | 0.16883 |
| MORALE | | | 1.00000 | -0.18677 | -0.51277 | -0.15236 |
| GRIND | | | | 1.00000 | 0.20851 | 0.13905 |
| TRANST | | | | | 1.00000 | 0.06959 |
| JOB | | | | | | 1.00000 |

| PROL WITH: | $R^2$ | Std. Error | F-Value | For $\alpha$=.05 F= |
|---|---|---|---|---|
| PRON | .36919 | .97593 | 22.24044 | 4.08 |
| JOB | .45650 | .91804 | 15.53833 | 3.23 |
| TRANST | .48372 | .90710 | 11.24312 | 2.92 |
| GRIND | .49522 | .90965 | 8.58442 | 2.69 |
| MORALE | .50826 | .91094 | 7.02853 | 2.53 |

TABLE 33

SUMMARY MORALE AND PRODUCTIVITY INDICATORS

| Variable | Plus | Indif-ferent | Minus |
|---|---|---|---|
| Vulnerability: | | | |
| Age | .53 | .30 | .17 |
| Experience | .77 | .17 | .06 |
| Out-of-date Education | .75 | .18 | .07 |
| Geographical Constraints | .58 | .23 | .19 |
| Tenure Interruptions | .67 | .13 | .20 |
| Dead-end Job | .53 | .18 | .29 |
| Perceived Unfairness of: | | | |
| Warning Time: Morale | .06 | .27 | .67 |
| Warning Time: Near-term Productivity | .15 | .22 | .63 |
| Uniform Implementation | .37 | .05 | .58 |
| Performance Appraisal | .41 | .01 | .58 |
| Balance Org./Pers. | .41 | .07 | .52 |
| Communications Type | .18 | .36 | .46 |
| Older Equity | .38 | .26 | .36 |
| Higher Paid Equity | .51 | .28 | .21 |
| Warning Time: Long-term Productivity | .30 | .50 | .20 |
| Awards | .35 | .45 | .20 |
| Management Intervention | .81 | .02 | .17 |
| Women Equity | .63 | .27 | .10 |
| Minority Equity | .75 | .14 | .10 |
| Promotions | .01 | .99 | 0 |
| Morale Average | .48 | .25 | .27 |
| Near-Term Prod. Average | .47 | .26 | .27 |
| Long-Term Prod. Average | .47 | .24 | .29 |

engineers with regard to the personnel-related activities of their organizations. This suggests that there are some aspects of personnel retention systems that could bear careful scrutiny, e.g. performance appraisal accuracy, balance of organizational objectives with personal considerations, uniform implementation of retention criteria, and the manner and timeliness of communication between employer and employee during retrenchment.

E. Communications

1. Question: How do engineers perceive the effectiveness of communications?

2. Approach: The survey questionnaire had one question that addressed this subject directly and several others that when taken individually and collectively might provide additional insight. The question directly specifically at this issue was: "How would you characterize communication between employer and employee during a reduction in force?" The respondent was given four pre-stated answers to choose between plus an opportunity to choose "other." In the event "other" was chosen the respondent was asked to submit a brief description of the factor.

In addition to the responses gained via the questionnaires, responses were also solicited from the COMMOG, AEROG, and GOVTG management personnel. Table 34 is a summary of the responses to this question presented by organization and/or interest group.

TABLE 34

COMMUNICATION TYPE

Question: How would you characterize communication between employer and employee during a reduction-in-force?

| Answer: Organization or Interest Group | Percentage of Sample Size: Unil. and Super-ficial | Unil. and Informa-tive | Bilat. and Super-ficial | Bilat. and Informa-tive | Other | Sample Size |
|---|---|---|---|---|---|---|
| Composite (all) | 28.3 | 30.0 | 17.5 | 17.5 | 6.6 | 119 |
| COMMOG | 32.5 | 37.5 | 12.5 | 12.5 | 5.0 | 40 |
| AEROG | 22.5 | 27.5 | 22.5 | 22.5 | 5.0 | 39 |
| GOVTG | 30.0 | 25.0 | 17.5 | 17.5 | 10.0 | 40 |
| COMMOG Management | - | 50.0 | - | 50.0 | - | 17 |
| AEROG Management | 21.0 | 29.0 | 29.0 | 21.0 | - | 14 |
| GOVTG Management | - | 40.0 | 6.7 | 53.3 | - | 15 |
| All by age: | | | | | | |
| Young (20 to 40 yrs.) | 23.8 | 26.2 | 19.0 | 21.4 | 9.5 | 42 |
| Mid (40 to 45 yrs.) | 35.3 | 23.5 | 23.5 | 8.8 | 8.8 | 34 |
| Older (over 45 yrs.) | 27.9 | 39.5 | 11.6 | 20.9 | - | 43 |
| Employees who had rec'd an adverse action | 29.0 | 29.0 | 13.0 | 29.0 | - | 31 |
| Employees who had not rec'd an adverse action | 28.4 | 30.7 | 19.3 | 13.6 | 8.0 | 88 |

3. Analysis and results:

In general, the discussion that follows will be structured around comparisons of answers between organizations or interest groups and the answers given by the "composite" group, i.e. all 119 (3 groups of 40, one group had a non-respondent) engineers surveyed via the questionnaire.

It can be seen rather quickly that taken as a group engineers feel that communications with their employers are unilateral in nature and they are evenly divided as to whether such communications are superficial or informative. Comparing the responses of the three organizations is somewhat more interesting in that both COMMOG and GOVTG engineers show a clear feeling that communications in their organizations are unilateral but the AEROG engineers are less decisive. AEROG answers tend to be almost uniformly distributed among the four pre-stated answers which implies that they are not really sure of the exact nature of their communication system. In fact, what may be reflected in the AEROG responses is the nature of the AEROG organization. The AEROG location that was surveyed is very large (many times larger than either COMMOG or GOVTG locations that were surveyed) and major sub groups within that AEROG operating location take on unique and differentiated personalities. It is entirely likely that communications systems vary between these major sub-groups and are responsible for the data shown in Table 34 (recall that the 39 AEROG engineers surveyed come from atl sub-groups of AEROG rather than a single organization as was more the case for the COMMOG and GOVTG respondents). In this same vein it should be pointed out that the answers of AEROG management are also rather uniformly distributed among the four pre-stated choices while COMMOG and GOVTG managers are bimodal in their choice of answers. COMMOG and GOVTG manager may not have a clear cut preference between "unilateral" and "bilateral" but there is no doubt that they think of their communications as "informative"!!! It is interesting that both the COMMOG and GOVTG managers are twice as likely to characterize their communications as "informative" than are their respective engineering work forces.

When the 119 engineers are separated by age into a young group (20 to 40), a middle group (40 to 45), and an older group (over 45) and their answers are tabulated no marked departure from the answers of the group taken as a composite are easily discernible. Each of three age groups taken separately characterize their communications systems as "unilateral" which was also the clear choice of answers for the composite group. Prior to seeing the survey results the authors had speculated that perhaps one age group would respond contrary to the other two groups; such a reversal was not evidenced. However, it does appear that age and a perceived "unilateral" communication scheme are somewhat correlated in that 67.4% of the older group answered "unilateral" as compared to 58.8% of the middle group and 50% of the young group.

The older group also considered communications to be "informative," i.e. some 70.4% of the older group chose one of "informative" answers compared to 47.5% for the composite; 47.6% for the younger group and 32.3% for the middle group. It should be noted that 38 of 46 managers polled, i.e. 83% of the respondents similarly selected one of the two "informative" answers. One possible explanation for this apparent agreement between management and the older group of engineers may well be that older engineers tend to occupy positions of leadership but are classified as professional rather than management personnel. A prime example of this is in the GOVTG organization wherein a GS-14 may be either an individual contribution or a manager depending on the organizations' Unit Manning Document (the organization chart showing authorized positions, number of employees, and grades). Similarly, both COMMOG and AEROG recognize the role of "lead engineers"; i.e. people who direct or coordinate the technical work of other engineers.

The last special interest group whose opinions are reflected in Table 34 are those 31 people of the 119 respondents who had at some time in their career received an adverse action, that is to say a lay off, downgrade, or reduction in pay. Once again, prior to conducting the survey we felt that people who had been adversely affected would respond differently to this question of communication characteristics than would the universe at large. And again we were mildly surprised (i.e. wrong). The message continues to be that engineers perceive their communications to be "unilateral" in nature regardless of whether or not they as individuals had been subjected to an adverse action. What does come through though in analyzing this group of people is that the majority of them (58%) believed their communication systems to be "informative" as compared to 47.5% and 44.3% for the composite and the non-adversely affected groups respectively. Hopefully the inference in this data is that COMMOG, AEROG, and GOVTG make a real attempt to communicate effectively with those individuals most impacted by a reduction-in-force, i.e. those who are laid off, downgraded or reduced in pay. This thought though should not be extrapolated to imply that those engineers who are adversely impacted are either happy or that they believe their retention system to be equitable; it only means that communications between them and their employers tend to be "informative" during a RIF.

It was felt by the authors that another way to evaluate an organization's communications scheme would be to probe the issue of "timeliness." We very much wanted to select a specific area in which to examine the various groups' perceptions of "timeliness" that would be unambivalent; therefore we chose timeliness of communications with respect to adverse actions. We reasoned that no individual could conceivably be uninterested in if or when he would receive notice of his impending dismissal, downgrade or salary cut. Table 35 presents the results of this probe..

The clear indication from Table 35 is that COMMOG, AEROG, and GOVTG do provide timely notice of forthcoming adverse actions and no single group of engineers differs greatly in their choice of answers from that of the composite. There are, however, several points of interest that can be gleaned from the data. AEROG has the lowest difference between "yes's" and "no's" which perhaps reinforces the

TABLE 35

TIMELY NOTICE

| Question: Do you feel that your organization provides timely notice of pending adverse personnel actions? | | | |
|---|---|---|---|
| Answer: Organization of Interest Group | Percentage of Sample Size | | Sample Size |
| | Yes | No | |
| Composite (COMMOG+AEROG+GOVTG) | 71.8 | 28.2 | 117 |
| COMMOG | 71.8 | 28.2 | 39 |
| AEROG | 64.4 | 31.6 | 38 |
| GOVTG | 75.0 | 25.0 | 40 |
| COMMOG Management | 85.0 | 15.0 | 17 |
| AEROG Management | 86.0 | 14.0 | 14 |
| GOVTG Management | 86.7 | 13.3 | 15 |
| Employees who had received an adverse action | 75.9 | 24.1 | 29 |
| Employees who had <u>not</u> received an adverse action | 70.5 | 29.5 | 88 |
| GOVTG Veterans | 85.3 | 14.7 | 34 |
| GOVTG Non-Veterans | 16.7 | 83.3 | 6 |

data seen in response to the previous question (paragraph D) wherein AEROG had no consensus with respect to the characteristics of their communications system.

All three management groups are closer to achieving unanimity in their response than are their respective engineers (this is another instance when management and engineers answer a question in the same general manner or direction but management is much more positive than are the engineers).

It should be noted that engineers who received an adverse action at some point in their careers feel that their organizations provide timely notice of adverse actions and in fact they feel more strongly about this than do either the employees who have never received such an action or the total sampled engineering universe. The authors continue to be intrigued by this trend for people who have received adverse actions to be more favorably inclined toward their organization's communication system than are their counterparts who have been unaffected by RIFs.

The last point to be drawn from the data in Table 35 is that when the GOVTG sample is separated into veterans and non-veterans the answer to the basic question changes drastically. Despite the fact that there are only 6 non-veterans in the GOVTG sample of 40 engineers we still consider it important that 5 of the 6 said GOVTG does not provide timely notice of adverse actions. As in the other issues discussed in this section it would appear that the non-veterans are much more sensitive or concerned about RIFs. We feel that this increased concern (usually expressed in a negative fashion) is due to awareness of the non-veteran that military service is second only to seniority in determining the retainability of individual engineers. In fact, a veteran with three or more years civil service is considered as preferentially retainable to a non-veteran with any amount of service!

The last major attempt to analyze engineers (and managers) perceptions as to the effectiveness of communications was to look at their perceptions of the retention system used within their particular organization. The argument was that if an engineer feels that he and his immediate supervisor have the identical idea of what constitutes their organization's retention system that communications between the employer and employee must be relatively effective (elsewhere in this section are discussions of how well various interest groups understand the content of their retention systems and how equitable they consider the systems to be). Similarly, we were interested in seeing how closely the manager thought he and his engineer's perceptions were and as a credibility check we asked managers to list (rank ordered) the criteria used in his organization's retention system, we then matched the manager's lists against the actual criteria his system currently employs. This credibility check is really a look at how well policy and procedural data is communicated from more senior (or staff managers) to more junior (or line) managers. The results of the "credibility" checks are presented first in order to better understand the later discussion of engineers' perceptions. Table 36 depicts the

TABLE 36

PRESENT RETENTION SYSTEM CRITERIA FOR:

| | COMMOG | | AEROG | | GOVTG | |
|---|---|---|---|---|---|---|
| | Management Perception | Actual | Management Perception | Actual | Management Perception | Actual |
| 1. | Performance | Same | Performance | Same | Seniority | Same |
| 2. | Technical Competence | Same | Technical Competence | Same | Military Service | Same |
| 3. | Critical Skill | Same | Critical Skill | Same | Implement Regulations | Current Assignment |
| 4. | Seniority | Same | Current Assignment | Same | Performance | Same |
| 5. | Current Assignment | Same | Seniority[1] | Same | Critical Skill | Same |
| 6. | - | - | - | - | Current Assignment | Implement Regulations |

[1]Under the terms of a current collective bargaining agreement employees with a 20 and 30 years service are guaranteed certain minimum retention ratings which can have the effect of making this the prime criteria in those instances.

management perceptions as to the criteria presently used in their respective retention systems compared to the actual retention criteria as found either in print or by interviewing the staff administrator responsible for retention.

It is very rewarding to the authors (who are engineering managers from the three surveyed organizations) that the management perception of the retention system criteria so nearly matches that of the actual criteria. Only GOVTG management shows any difference when comparing the top 5 criteria to those actually employed and when the sixth criteria is added to the list that is accounted for--as will be explained later the rank ordering is not as important to this study as is the correct identification of the criteria involved. The high understanding evidenced by management is particularly rewarding in the cases of COMMOG and AEROG inasmuch as very little written material pertaining to the retention system is in existence. These data would imply that communication from the top down or staff to line is very good in all three organizations and also reinforces the results of the question in paragraph A of this chapter, wherein the consensus of the COMMOG and AEROG was that they were "conversant" with their retention systems and GOVTG managers were all either "generally familiar" or "conversant" with their system.

Having dispensed with the issue of internal management communications it is appropriate to turn to the perception side of this question. Table 37 provides data to aide in the ensuing discussion.

TABLE 37

ENGINEER/MANAGER PERCEPTION MATCH

Question: Do you believe that your perception of your present retention system is virtually the same as that of your immediate supervisor's and higher-level management's?

| | Percent | | Sample Size |
|---|---|---|---|
| | Yes | No | |
| Engineers | | | |
| Composite | 52.8 | 47.2 | 106 |
| COMMOG | 50.0 | 50.0 | 40 |
| AEROG | 47.0 | 53.0 | 34 |
| GOVTG | 62.5 | 37.5 | 32 |
| Management | | | |
| COMMOG | 80.0 | 20.0 | 17 |
| AEROG | 78.0 | 22.0 | 9 |
| GOVTG | 93.3 | 6.7 | 15 |
| Age | | | |
| Younger | 44.7 | 55.3 | 38 |
| Mid-Age | 48.4 | 51.6 | 31 |
| Older | 64.9 | 35.1 | 37 |
| GOVTG Veteran Status | | | |
| Veterans | 59.3 | 40.7 | 27 |
| Non-Veterans | 80.0 | 20.0 | 5 |

Note: Managers who were asked this question were asked to substitute "engineers" for "supervisors."

Taken as a composite the respondents were almost evenly divided on this issue being only slightly biased toward a "yes" answer. The significant point about the data is found in GOVTG's response wherein 62.5% of the engineers surveyed said "yes"; this is probably a result of the government system being better defined in written form than either COMMOG's or AEROG's (note too, that on the question of "familiarity with your retention system," paragraph A of this chapter, that GOVTG showed the most familiarity of the three groups). AEROG continues to buck the trend with respect to communications questions exhibiting the lowest number of "yes" responses for both engineers and managers.

Once again we see the responses of management being in the same direction as those of engineers only more so. GOVTG managers, like GOVTG engineers, show proportionately more "yes" answers than do their COMMOG and AEROG opposite numbers and presumably for the reason discussed earlier.

When the engineering universe is subdivided into the three age groups (young, middle, and old) we see that the young tend to feel less likely that they and their supervisors share a common view of the retention system, the middle group more nearly matches the impression of the composite, and the older group is the most positive of all. This bias on the part of the older group is due to two factors: first, GOVTG has an older average age than does either COMMOG or AEROG and as can be seen above the general GOVTG answer is biased toward "yes" and secondly, there is some likelihood that older engineers tend to think of themselves as quasi-supervisors or members of management by virtue of their seniority and propensity to gravitate toward "lead" engineer positions.

The last cross cut at the data we made was to separate GOVTG engineers into veterans and non-veterans. As was expected from looking at the GOVTG composite versus the whole sample, each of these two sub-groups was biased toward "yes" responses; however, due to the binary mode of the answers and the small group of non-veterans in the survey it is impossible to say anything meaningful with respect to the non-veterans responses. Note that a shift of 1 of the 5 respondents from a "yes" to a "no" would have brought the results into total agreement with the veteran sample.

F. Fairness

1. Question: How do engineers perceive the fairness of their retention systems?

2. Approach: The first part of this exercise will concentrate on analyzing the results obtained from asking a direct question to COMMOG, AEROG, and GOVTG personnel with respect to the equity of their respective retention systems. In keeping with our general formal responses will be tabulated by organization and interest groups.

The second part of the exercise will attempt to shed some light on perceived equity or fairness by examining present retention criteria.

Table 38 shown depicts the data from the first part of this exercise, i.e. the direct question approach.

TABLE 38

RETENTION SYSTEM FAIRNESS

| Question: How would you rate the Equity of your retention system? | | | | | | | |
|---|---|---|---|---|---|---|---|
| Answer: Organization or Interest Group | Poor | Marg. | Fair | Good | Excel. | Mean of Resp. | Sample Size |
| Composite (all) | 3.3 | 33.3 | 41.7 | 20.0 | 0.8 | 2.8 | 119 |
| COMMOG | - | 23.0 | 48.7 | 25.6 | 2.7 | 3.0 | 39 |
| AEROG | - | 42.5 | 42.5 | 15.0 | - | 2.7 | 40 |
| GOVTG | 10.0 | 35.0 | 35.0 | 20.0 | - | 2.7 | 40 |
| COMMOG Management | - | - | - | 100.0 | - | 4.0 | 17 |
| AEROG Management | - | - | - | 100.0 | - | 4.0 | 14 |
| GOVTG Management | 33.3 | 13.3 | 26.7 | 20.0 | 6.7 | 2.5 | 15 |
| All by Age | | | | | | | |
| Young (20 to 40 yrs.) | - | 38.1 | 40.5 | 21.4 | - | 2.8 | 42 |
| Mid (40 to 45 yrs.) | 5.9 | 35.3 | 41.2 | 14.7 | 2.9 | 2.7 | 34 |
| Older (over 45 yrs.) | 4.7 | 27.9 | 44.2 | 23.3 | - | 2.9 | 43 |
| Employees who had rec'd an adverse action | 3.2 | 35.5 | 45.2 | 16.1 | - | 2.8 | 31 |
| Employees who had not rec'd an adverse action | 3.4 | 33.0 | 40.9 | 21.6 | 1.1 | 2.8 | 88 |
| GOVT Veterans | 11.8 | 29.4 | 35.3 | 23.5 | - | 2.7 | 34 |
| GOVT Non-Veterans | - | 66.7 | 33.3 | - | - | 2.3 | 6 |

Note: Answers are presented as a percent of sample size (i.e. of responses received).

3. Analysis and Results: A quick recap of the data in Table 38 indicates that taken as a composite group the engineers surveyed rated their retention systems above "marginal" and slightly less than "fair" (the average response was 2.8 wherein a "1" was "poor" and a "5" was "excellent"). With respect to equity COMMOG engineers in general rated their system as "fair" with almost 30% of them rating it "good" or better. Both AEROG and GOVTG had more than 40% of their engineers rate their respective systems as "marginal" or lower.

COMMOG and AEROG managers rated the equity of their retention systems higher than did their engineers and much higher than GOVTG managers rated their system. It should be noted that GOVTG managers actually filled out a questionnaire since they are rated on the same retention system as their engineers, while COMMOG and AEROG managers were interviewed and composite answers were determined post-facto by the interviewers. The authors find it interesting that the GOVTG management group assigned the only "poor" ratings of any organization or interest group indicating, we believe, great dissatisfaction with their present retention system. Additional comments relative to GOVTGs retention system are provided in Appendix G.

Separating the total engineering population into sub-groups by age provides no new slant on the perceived equity question inasmuch as the distribution (and mean) of their answers by age group does not differ materially from that of the group taken as a body. If one would like to go through the arithmetic gymnastics it can be shown that those mid-age group and older age group people rating their system as "poor" are the same 4 GOVTG individuals who assigned "poor" ratings. (Ed. note: such gymnastics are performed from time to time to justify expensive hand held calculators and use of the Statistical Package for Social Scientists.)

In addition to the sub-division by age of the population we thought it might be useful to see if those people who had received an adverse action at some time in their career might view the equity question differently than either the composite group or their counterparts who had not been subject to a layoff, downgrade, or salary reduction. Once again, this group could not be distinguished on the basis of their answers to the survey questions; in fact, the mean of their responses was within 4 percent of the mean of the composite group's responses.

A closer look at the GOVTG group was attempted by dividing the group into veterans and non-veterans but the results are inconclusive. The results of the veterans sub-group are very close to those of the total GOVTG group and not markedly different from those of all engineers taken collectively while the non-veteran group does not even exhibit a well defined trend much less a statistically meaningful result due to the small sample size.

The second approach to understanding how the various organizations view the equity of their retention systems involves a comparison of retainability criteria or factors. Twice in the questionnaires we asked the respondents to rank order a list of 11 such criteria of factors (the 12th item was "other (specify)" and did not prove to be a popular response). The first such ranking was with regard to the importance of these factors in the organization's present retention system and the second such listing was with regard to the individual's notation of their importance in an ideal retention system. In a similar manner we elicited two lists from the three management groups and as mentioned earlier in this report we have actual evaluation criteria presently in use by COMMOG, AEROG, and GOVTG.

The thrust of this exercise will be to compare the engineers' and managers' perceptions of present and ideal retention systems and additionally to make comments in the light of relative importance of the factors and criteria in the systems actually in use today.

In order to keep the numbers manageable we will only address those factors ranked in the top five by any particular group and we will suspend the rank ordering argument; i.e. if a factor appears in the top five of one group's list and in the top five of another group's list we call that factor a "match" regardless of whether or not it occupied the same line position on each list.

Table 39 on the next page is a summary of present, ideal, and actual retention criteria for COMMOG, AEROG, and GOVTG and for their respective management groups.

Perhaps the data shown below will help to summarize Table 39 and provide a basis for discussion.

TABLE 39

RETENTION CRITERIA AS SEEN BY ENGINEERS WITHIN:

| | COMMOG | | | AEROG | | | GOVTG | | |
|---|---|---|---|---|---|---|---|---|---|
| | Pres. | Ideal | Actual | Pres. | Ideal | Actual | Pres. | Ideal | Actual |
| 1. | perf. | same | same | perf. | same | same | sen. | perf. | sen. |
| 2. | tech. comp. | same | same | tech. comp. | same | same | mil. serv. | tech. comp. | mil. serv. |
| 3. | curr. assig. | crit. skill | crit. skill | crit. skill | same | same | pol. | sen. | curr. assig. |
| 4. | pol. | sen. | sen. | pol. | sen. | curr. assig. | regs. | crit. skill | perf. |
| 5. | crit. skill | curr. assig. | curr. assig. | ten.w/ org. | same | sen. | curr. assig. | regs. | crit. skill |
| Retention Criteria as Seen by Managers Within: | | | | | | | | | |
| 1. | perf. | same | same | perf. | same | same | sen. | perf. | sen. |
| 2. | tech. comp. | same | same | tech. comp. | same | same | mil. serv. | tech. comp. | mil. serv. |
| 3. | crit. skill | same | same | crit. skill | same | same | regs. | crit. skill | curr. assig. |
| 4. | sen. | same | same | curr. assig. | same | same | perf. | sen. | perf. |
| 5. | curr. assig. | same | same | sen. | same | same | crit. skill | curr. assig. | crit. skill |

Note: The rank order listings shown on this table were derived by a weighted average technique after tabulating the responses contained in 116 questionnaires--see appendix for additional data.

NUMBER OF MATCHES BETWEEN - & -

| Organization | Present and Ideal | Present and Actual | Ideal and Actual |
|---|---|---|---|
| COMMOG | 4 | 4 | 5 |
| AEROG | 4 | 3 | 4 |
| GOVTG | 2 | 3 | 3 |
| COMMOG-MGMT | 5 | 5 | 5 |
| AEROG-MGMT | 5 | 5 | 5 |
| GOVT-MGMT | 3 | 4 | 4 |

Remember, in each of the cases listed above "present" and "ideal" mean as perceived by the organization answering the questions and "actual" is as things are today in the organization.

Once again the optimism of the manager is present in the data. If you believe the picture as seen by COMMOG and AEROG management everything is satisfactory; their idea of the perfect system is just what they have today. In their defense it should be pointed out that these same people are influential in shaping the retention system and the data indicates they have been successful in getting a system that reflects their desires.

In the case of COMMOG management it appears that they have managed to design a system that not only satisfies them but similarly satisfies their engineers. AEROG and GOVTG management appear to be respectively less successful than COMMOG in satisfying their work forces and indeed if we recall the discussion in Chapter 1, it will be seen that the rank ordering of organizations in terms of perceived equity of their respective retention systems was COMMOG, AEROG, and GOVTG.

Earlier in this chapter we mentioned that for "matching" purposes we did not attach any significance to line position in the several rank orders; however, it is time to rescind that statement and look at some of the implications of relative rank ordering of retention system criteria. As an example: every organization had "performance" and "technical competence" ranked one and two respectively in their list of ideal criteria! In the case of COMMOG and AEROG both the engineers and managers believed the "present" system to have those factors in that sequence as indeed they do (re: "actual" data entries). However, the "actual" system employed by GOVTG has "seniority" and "military service credit" as one and two ("performance" is fourth and "technical competence" does not appear on the list). Interestingly enough, both GOVTG engineers and managers understand that "seniority" and "military service credit" are one and two respectively which reinforces an earlier conclusion that GOVTG communicates rather well and that the members of the organization have a high degree of understanding with respect to their retention system. This same understanding also goes a long way toward explaining why GOVTG personnel give lower marks to their retention system with respect to equity.

G. Escape Tendencies

1. Hypothesis: Engineers tend to leave the organization (transfer, quit, or retire) rather than face adverse action.

2. Approach: This line of examination started out as a curiosity issue centering around how likely are engineers to receive some adverse action during their careers and what will they do to avoid such actions. A secondary issue developed around the attitudes of engineers in widely differing environments, i.e. are aerospace engineers more subject to such actions and are their reactions different than a non-aerospace engineer? Earlier in this chapter there was a discussion of engineers' attitudes with respect to job security and this section struck us as a good place to further examine the attitude of people who have received an adverse action.

The technique in this section is a simple one in that the questionnaire had several direct questions dealing with people who were subjected to adverse actions and their corresponding reactions. What we would like to do then is look at those people who received an adverse action and those people who transferred or quit, to see if there is any relationship in evidence. To this end the following three summaries provide data with respect to people receiving adverse actions, those who transferred to avoid such an action and those who quit rather than be subjected to the action.

3. Analysis and Results.

Question: Have you ever received an adverse personnel action, such as being laid off, reduced in level, reduced in grade, or in pay?

| Answer: Organization | Yes | No | Sample Size |
|---|---|---|---|
| Composite | 25.8% (31) | 74.2% (89) | 120 |
| COMMOG | 20.0 (8) | 80.0 (32) | 40 |
| AEROG | 32.5 (13) | 67.5 (27) | 40 |
| GOVTG | 25.0 (10) | 75.0 (30) | 40 |

It appears that about one-fourth of the surveyed engineers have been the recipient of some adverse action during the course of their careers. Aerospace engineers were most affected, followed by government and communication engineers.

Question: Have you ever transferred, voluntarily or involuntarily, to avoid adverse action?

| Answer: Organization | Yes Voluntarily | Yes, Involuntarily | No | Sample Size |
|---|---|---|---|---|
| Composite | 20.0% (24) | 6.7% (8) | 73.3 (88) | 120 |
| COMMOG | 7.5 (3) | - (-) | 92.5 (37) | 40 |
| AEROG | 25.0 (10) | 7.5 (3) | 67.5 (27) | 40 |
| GOVTG | 27.5 (11) | 12.5 (5) | 60.0 (24) | 40 |

Slightly more than one fourth of the survey population has transferred to avoid adverse action with GOVTG personnel as the most active followed by AEROG. It should be noted that while both GOVTG and AEROG have formal transfer systems COMMOG does not sanction employee initiated transfers.

Question: Have you ever quit a job to avoid adverse personnel action?

| Answer: Organization | Yes | | No | | Sample Size |
|---|---|---|---|---|---|
| Composite | 7.0% | (8) | 93.0% | (107) | 115 |
| COMMOG | 2.5 | (1) | 97.5 | (39) | 40 |
| AEROG | 11.0 | (4) | 89.0 | (32) | 36 |
| GOVTG | 8.0 | (3) | 92.0 | (36) | 39 |

Of the three organizations polled, AEROG had the highest percentage of employees who quit to avoid an adverse action while GOVTG was a close second and COMMOG a distant third. Impending downturns in the nature of both AEROG and GOVTG business are relatively visible and as a result it is not unusual to see individuals who know they are in jeopardy quit before the personnel actions actually start or before they reach their level. It is considered by some to be an advantage to quit rather than be laid off.

Now, let us scrutinize the 32 people in our sample who were transferred (either voluntarily or involuntarily) to see if they experienced a higher or lower incidence of adverse actions than did their non-transferred counterparts.

| | Received Adverse Action | No Adverse Action | | |
|---|---|---|---|---|
| Transferred | 12 | 20 | = | 32 |
| Not Transferred | 19 | 69 | = | 88 |
| | 31 | 89 | | 120 |

Of those who transferred 37.5% have received an adverse action at some stage in their career compared to 27.5% of the non-transferred people who have received such an action.

A similar analysis can be conducted with those people who quit to avoid an adverse action.

| | Received Adverse Action | No Adverse Action | | |
|---|---|---|---|---|
| Have quit | 2 | 6 | = | 8 |
| Have not quit | 28 | 79 | = | 107 |
| | 30 | 85 | | 115 |

One fourth of each group (those who have quit and those who have not quit) have received adverse actions during their careers and hence no correlation between quitting and the incidence of adverse actions is evident.

Inasmuch as AEROG personnel received the highest number of adverse actions we elected to look at the perception of job security as seen by those AEROG engineers who were the recipients of the adverse actions and compare it with their un-impacted AEROG counterparts and all 120 surveyed engineers. Those data are presented below.

Question: How do you rate your degree of job security in your present assignment with respect to comparable other sector (government or industry jobs?

| Answer: (in percent) | Much Lower | Somewhat Lower | About the Same | Somewhat Higher | Much Higher | Sample Size |
|---|---|---|---|---|---|---|
| AEROG w/adv. ACTION | 23.1 | 53.8 | 23.1 | - | - | 13 |
| AEROG w/o ACTION | 18.6 | 33.3 | 33.3 | 14.8 | - | 27 |
| All Engineers | 13.3 | 31.7 | 27.5 | 26.7 | 0.8 | 120 |

It is readily apparent, at least in the case of AEROG engineers, that once having been the subject of an adverse action your perceived job security at a later point in time is very low.

One last point before we leave this section: as we have seen about 27% of the surveyed engineering population have transferred to avoid an adverse action and 7% have quit for the same reason, and yet when we asked the same group if they knew of others who had taken similar steps the responses were of a much different magnitude. Fully 63% of the respondents (ranging from 35% of the COMMOG engineers to 85% of the GOVTG engineers said they had known at least one such person and 45% of the respondents (with a range of $\pm$ 5%) knew someone who had quit for the same reason. Assuming that these figures reflect a genuine overstatement of fact it appears that this may indicate the intensive state of emotionalism that comes into play when retention systems and reductions in force are the subject of discussion.

## H. A Re-Capitulation of Hypotheses and Questions

1. The Data Base - The three 40-engineer respondent groups from Communications, Aerospace, and Government were also non-homogenious. Table 40 compares the key demographics which should be considered when assessing comparative results between sources. Again, the Communications engineers are younger, less experienced, and have more non-veterans than are the Aerospace, and to a greater extent, the Government engineers.

2. Hypotheses and Quetions - The individual queries in the Engineering Questionnaire each relate to the seven larger issues to be discussed in this paragraph. Responses will be aggregated as composite, individual source (Communications, Aerospace, and Government), industry or government, age groups (young, mid and older), degree of previous impact by adverse action, and (in the Government case) veteran status. Each major question will be introduced, analyzed and discussed in turn.

a. Familiarity - The question "How well do engineers understand their retention systems?" is discussed in Table 41. It shows the results of Question 16, ranking the engineer's familiarity from (1) Unfamiliar to (5) Conversant. This is compared with the degree of match between the engineer's perception of his ranked retention criteria and the actual ranked criteria. The former

TABLE 40

PHASE TWO--RESPONDENT DEMOGRAPHIC COMPARISON

| Variable | Composite | Communi-cations | Aerospace | Govern-ment |
|---|---|---|---|---|
| Average Age | 50.1 | 46.6 | 49.7 | 54.5 |
| Age Range | 20-65 | 20-60 | 20-65 | 30-65 |
| Minorities | 2.5% | 2.5% | 5% | 0% |
| Veterans | 72% | 63% | 67% | 82% |
| Average Service | 15.4 | 13.3 | 15.4 | 17.5 |

TABLE 41

FAMILIARITY WITH RETENTION SYSTEM VERSUS RETENTION CRITERIA MATCH

| | Familiarity (Average Response on a 1 to 5 Scale) | Average Criteria Matches, Engineer-to-Actual (1st 4 Criteria) |
|---|---|---|
| Communications | 2.5 | 2.6 |
| Aerospace | 3.1 | 2.2 |
| Government | 3.7 | 2.0 |

indicates the Government engineers to be the most familiar, but the latter reflects that they have the lowest match of criteria! Conversely the Communications engineers think they are less familiar than their match record (the highest) indicates. While the Government system is well-documented, the other systems have less available written information. It is anomolous but interesting to note the high number of "Have Read" responses by the Aerospace engineers of their not generally published or available system definition. Finally, Government veterans appear to be more familiar with their retention system than non-veterans.

b. Special Interest Perceptions - The hypothesis "Engineering attitudes relative to their retention systems differ with special interests (e.g. age, by degree of personal impact by adverse actions, engineer versus manager viewpoint, and, in the Government sample, veterans status)." is approached by taking a sample question (How do you rate your degree of job security in your present assignment with respect to comparable other sector jobs?) for which sensitivities to the aforementioned divisions are postulated, and evaluating the responses by division. Table 42 reflects the more interesting comparisons. The engineer sources differed considerably--the Communications and the Aerospace engineers as the most and least secure, respectively (a possible result of the nature of their businesses). The managements of the three followed the same trend, but rated absolute security higher! Little age differentiation was seen although slight increases in feelings of security were evident

TABLE 42

JOB SECURITY QUESTION, RESPONSES OF SPECIAL INTEREST GROUPS

| Interest Group | Job Security Average Response (on a 1-bad to 5-good scale) |
|---|---|
| Composite Engineers | 2.7 |
| Communications | 3.2 |
| Aerospace | 2.3 |
| Government | 2.7 |
| Age Difference | |
| Younger (20-40) | 2.7 |
| Mid-Aged (40-45) | 2.7 |
| Older (45 up) | 2.8 |
| Personnnel Impact | |
| Affected | 2.6 |
| Not Affected | 2.7 |
| Management | |
| Communications | 4.0 |
| Aerospace | 3.0 |
| Government | 3.5 |
| Veteran Status (GOVT) | |
| Veteran | 2.7 |
| Non-Veteran | 2.2 |

in the older engineers. Personnel previously affected adversely had a somewhat lower sense of security than those not affected. Finally Government veterans felt, on the whole, more secure than the non-veterans.

c. Retention Criteria Commonality - The hypothesis "Engineers share a common philosophy with respect to personnel retention criteria" was analyzed by comparing the composite results (linearly weighted) from Question 15 (requesting the engineer's present rank ordered retention criteria) with those of Question 52 (requesting the ideal rank ordered retention criteria). Table 43 shows the comparison. Note that the top six criteria are practically identical for all three engineering groups except for the Tenure With Organization and Implementation of Regulations listings of Industry and Government, respectively, and a bit more emphasis desired by Government for seniority. The match between present and ideal criteria, especially among the top priorities, is good in Industry. On the other hand the Government engineers appear to desire a performance-based system instead of the present seniority system. Table 44 similarly provides a truncated version of the management perceptions of present and ideal retention criteria. Both Communications and Aerospace management samples perceive exact matches between the retention systems they have and their ideals. The Government management agrees with their engineers in desiring a performance-based system, but the managers are unique in including politics high in the ideal criteria! (All the engineers reflect

TABLE 43

PRESENT AND IDEAL RETENTION SYSTEM CRITERIA COMPARISON--ENGINEERS

| | Composite | | Communications | | Aerospace | | Government | |
|---|---|---|---|---|---|---|---|---|
| Rank | Present | Ideal | Present | Ideal | Present | Ideal | Present | Ideal |
| 1. | Performnc | Performnc | Performnc | Performnc | Performnc | Performnc | Seniority | Performnc |
| 2. | Tech Comp | Tech Comp | Tech Comp | Tech Comp | Tech Comp | Tech Comp | Mil Ser C | Tech Comp |
| 3. | Seniority | Crit Skil | Cur Asmt | Crit Skil | Crit Skil | Crit Skil | Politics | Seniority |
| 4. | Politics | Seniority | Politics | Seniority | Politics | Seniority | Impl Regs | Crit Skil |
| 5. | Cur Asmt | Tenure | Crit Skil | Cur Asmt | Tenure | Tenure | Cur Asmt | Impl Regs |
| 6. | Crit Skil | Cur Asmt | Seniority | Tenure | Seniority | Cur Asmt | Crit Skil | Cur Asmt |
| 7. | Tenure | Impl Regs | Tenure | Other | Cur Asmt | Salary | Performnc | Mil Ser C |
| 8. | Mil Ser C | Mil Ser C | Salary | Politics | Salary | Union Ag | Tech Comp | Tenure |
| 9. | Impl Regs | Salary | Impl Regs | Union Ag | Union Ag | Impl Regs | Tenure | Salary |
| 10. | Salary | Union Ag | Union Ag | Salary | Impl Regs | Mil Ser C | Union Ag | Union Ag |
| 11. | Union Ag | Politics | - | Impl Regs | Other | Politics | Salary | Politics |
| 12. | Other | Other | - | Mil Ser C | Mil Ser C | Other | Other | Other |

Legend:

Performnc - Performance
Tech Comp - Technical Competence
Cur Asmt - Current Assignment
Crit Skil - Critical Skill
Mil Ser C - Military Service Credit
Impl Regs - Implementation of Regulations
Union Ag - Union Agreement

TABLE 44

PRESENT AND IDEAL RETENTION SYSTEM CRITERIA COMPARISON--MANAGEMENT

| | Communications | | Aerospace | | Government | |
|---|---|---|---|---|---|---|
| Rk. | Present | Ideal | Present | Ideal | Present | Ideal |
| 1. | Performance | Performance | Performance | Performance | Seniority | Performance |
| 2. | Technical Competence | Technical Competence | Technical Competence | Technical Competence | Military Service Credit | Technical Competence |
| 3. | Critical Skill | Critical Skill | Critical Skill | Critical Skill | Implementation of Regs | Politics |
| 4. | Seniority | Seniority | Current Assignment | Current Assignment | Performance | Seniority |
| 5. | Current Assignment | Current Assignment | Seniority | Seniority | Critical Skill | Current Assignment |
| 6. | | | | | Current Assignment | Critical Skill |

politics as high in their present systems, but have little place for it in their ideal criteria.

d. Morale and Productivity - The question "Do engineers perceive that reductions in force have a negative impact on the individual and organization in terms of morale and productivity?" is a complex and subjective function of many other issues including native ability, perceived vulnerability, personality, observed fairness in the system, flexibility of management, perceived minority equity, type and timeliness of communication during retrenchment, and other factors. Since the questionnaire did not address morale and productivity directly, a summary of those responses related to these issues was compiled and is summarized in Table 45. Responses were weighted in terms of "Plus," "Minus," or "Indifferent," depending on the perceived impact on morale and productivity (near- and long-term). The average for each was determined as a figure of merit. The results are not startling, but the sub-results indicate some ambivalence by the engineers with regard to their personnel systems. Performance apprisal accuracy, balancing organizational objectives with personnel considerations, uniform implementation of actions, and the effectiveness of communication during retrenchment are sensitive areas.

e. Communications - The question "How do engineers perceive the effectiveness of communication?" was approached by analyzing three of the answers to the Questionnaire questions:

How do engineers perceive the effectiveness of communications?

Do you feel that your organization provides timely notice of pending adverse personnel actions?

Do you believe that your perception of your present retention system is virtually the same as that of your immediate supervisor's and higher-level managers'?

(1) In describing the type of communications during retrenchment, the respondents could select from four standard or insert an open answer. Table 46 summarizes their answers, employing the special interest group approach illustrated in paragraph B above. The composite engineers agreed (Aerospace in a less decisive way) that communications between themselves and their employers was unilateral (and about evenly split on informative versus superficial). The Communications and Government managers, on the other hand, felt strongly (twice as strongly as their engineers) that communications were informative but could not decide on unilateral or bilateral. The Aerospace managers' answers, like their engineers, were about uniformly distributed. Discrimination by age distribution was not evident.

(2) The responses to the issue on whether there is timely notice of pending personnel action are summarized in Table 47. The composite and organizational sources all indicate strong and consistent agreement that notice is timely. The management responses are as close to unanimity as the sample granularity will allow, and again they are more positive than the engineers. The results of the affected versus not affected comparison appears anomolous (more of

TABLE 45

MORALE AND PRODUCTIVITY INDICATORS

| | Plus | Indifferent | Minus |
|---|---|---|---|
| Morale Average | .48 | .25 | .27 |
| Near-Term Productivity | .47 | .26 | .27 |
| Long-Term Productivity | .47 | .24 | .29 |

Note: Variables considered include:

1. Perceived vulnerability (age, education, experience, family, geography, tenure, dead-end job)
2. Observed fairness (performance appraisal, promotions, awards)
3. Management flexibility (balance, uniform implementation, intervention)
4. Minority equity (race, women, older, higher paid)
5. Communications (type and timeliness on morale, near-term and long-term productivity)

TABLE 46

TYPE OF COMMUNICATION BETWEEN MANAGEMENT AND ENGINEERS DURING RETRENCHMENT (in percent)

| | Unilateral and Superficial | Unilateral and Informative | Bilateral and Superficial | Bilateral and Informative | Other |
|---|---|---|---|---|---|
| Engineers | | | | | |
| Composite | 28.3 | 30.0 | 17.5 | 17.5 | 6.6 |
| Communications | 32.5 | 37.5 | 12.5 | 12.5 | 5.0 |
| Aerospace | 22.5 | 27.5 | 22.5 | 22.5 | 5.0 |
| Government | 30.0 | 25.0 | 17.5 | 17.5 | 10.0 |
| Managers | | | | | |
| Communications | - | 50.0 | - | 50.0 | - |
| Aerospace | 21.0 | 29.0 | 29.0 | 21.0 | - |
| Government | - | 40.0 | 6.7 | 53.3 | - |

the affected concurred in the timeliness of notice than the not affected). The largest special interest group discrimination is between Government veterans and non-veterans. The non-veterans reflect heightened concern, probably due to their perceived vulnerability in a RIF.

(3) The match of the engineers' perception of the retention system to his managers is addressed in two ways. Table 48 summarizes his own perception, and this should be cross-checked by comparing Tables 43 and 44 results (engineers' perception and the management's on the present retention criteria). There is no general trend in the answer (about equal yes's and no's) except that the Government engineers agree (62.5%). While this could result from a better documented and available written retention system description, it could also reflect the false impression of conversance uncovered in paragraph H2a of this chapter (Familiarity). Again, the managers agree--in a big way. The age comparison appears to yield a trend, showing that engineers perceive they take on more "management-thinking" with age. It could also be that the bulk of the older engineers come from the Government sample which is higher yes-responding than Industry.

f. Fairness

A direct question on this subject is asked in the Engineering Questionnaire--"how would you rate the equity of your retention system?" Table 49 compares the responses by organization for engineers and

TABLE 47

TIMELINESS OF NOTICE OF ADVERSE ACTION

| | Yes | No |
|---|---|---|
| Engineers | | |
| Composite | 71.8 | 28.2 |
| Communications | 71.8 | 28.2 |
| Government | 68.4 | 31.6 |
| Managers | | |
| Communications | 85.0 | 15.0 |
| Aerospace | 86.0 | 14.0 |
| Government | 86.7 | 13.3 |
| Adverse Action Impact | | |
| Affected | 75.9 | 24.1 |
| Not Affected | 70.5 | 29.5 |
| Government Vet Status | | |
| Veterans | 85.3 | 14.7 |
| Non-Veterans | 16.7 | 83.3 |

TABLE 48

MATCH OF ENGINEER AND MANAGER PERCEPTIONS OF THE PRESENT RETENTION SYSTEM (IN PERCENT)

| | Yes | No |
|---|---|---|
| Engineers | | |
| Composite | 52.8 | 47.2 |
| Communications | 50.0 | 50.0 |
| Aerospace | 47.0 | 53.0 |
| Government | 62.5 | 37.5 |
| Managers | | |
| Communications | 80.0 | 20.0 |
| Aerospace | 78.0 | 22.0 |
| Government | 93.3 | 6.7 |
| Age | | |
| Younger | 44.7 | 55.3 |
| Mid-Aged | 48.4 | 51.6 |
| Older | 64.9 | 35.1 |

management. No special interest differentiation is shown because the results do not differ substantially. The composite perception was that retention system equity was between "Fair" and "Marginal." Communications had the highest rating (fair). Both Aerospace and Government, however, had more than 40% responses at "Marginal" or lower. Ten percent of the Government engineers rate their system "Poor." Industry management rated equity higher than their engineers, and much higher than Government management, who rated it lower than their engineers! One third rated the system "Poor" (over 45% "marginal" or lower), reflecting great dissatisfaction with the present Government retention system.

g. Escape Tendencies - A hypothesis was postulated that "Engineers tend to leave the organization (transfer, quit, or retire) rather than face adverse action." The issues were how often in an engineer's career are adverse actions likely to occur, and does the likelihood vary with the type industry? The Questionnaire polled the engineers on personal impact, and Table 50 reflects their answers. About one-fourth of those surveyed had received some adverse personnel action during their careers. Aerospace was the most affected and Communications the least affected. The Questionnaire then asked how many had transferred (either voluntarily or involuntarily) to avoid adverse actions. About 20% of the composite sample had, but the organizations differed widely. The Government sample was high with 27.5%, Aerospace was nearby with 25%, but Communications had only 7.5% who had transferred to avoid adverse

TABLE 49

EQUITY OF THE RETENTION SYSTEM
(IN PERCENT)

| | Poor | Marginal | Fair | Good | Excellent | Mean |
|---|---|---|---|---|---|---|
| Engineers | | | | | | |
| Composite | 3.3 | 33.3 | 41.7 | 20.0 | 0.8 | 2.8 |
| Communications | - | 23.0 | 48.7 | 25.6 | 2.7 | 3.0 |
| Aerospace | - | 42.5 | 42.5 | 15.0 | - | 2.7 |
| Government | 10.0 | 35.0 | 35.0 | 20.0 | - | 2.6 |
| Managers | | | | | | |
| Communications | - | - | - | 100.0 | - | 4.0 |
| Aerospace | - | - | - | 100.0 | - | 4.0 |
| Government | 33.3 | 13.3 | 26.7 | 20.0 | 6.7 | 2.5 |

TABLE 50

PERSONAL IMPACT OF ADVERSE ACTION
(IN PERCENT)

| | Yes | No |
|---|---|---|
| Engineers | | |
| Composite | 25.8 | 74.2 |
| Communications | 20.0 | 80.0 |
| Aerospace | 32.5 | 67.5 |
| Government | 25.0 | 75.0 |

action. (The latter organization does not sanction employee-initiated transfers.) When asked if they had quit to avoid adverse action, 7% of the total answered yes. Aerospace had 11%, Government had 8%, but Communications had 2.5% answering yes. Since Aerospace appears to have the highest escape tendencies, their job security feelings, differentiated by affected and not affected personally by adverse actions, were contrasted with those of the total sample in Table 51. Those Aerospace personnel affected perceive very low job security, compared with the total, and with respect to those not affected.

TABLE 51

AEROSPACE PERSONNEL ADVERSE ACTION CONTRAST
ON JOB SECURITY (IN PERCENT)

| Job Security of | Much Lower | Somewhat Lower | About Same | Somewhat Higher | Much Higher |
|---|---|---|---|---|---|
| Aerospace, Adversely Affected | 23.1 | 53.8 | 23.1 | - | - |
| Not Affected | 18.6 | 33.3 | 33.3 | 14.8 | - |
| All Engineers | 13.3 | 31.7 | 27.5 | 26.7 | 0.8 |

# CHAPTER 4

## SUMMARY

If the past is indeed a predictor of things yet to come it would appear that the fortunes of business and government agencies will continue to ebb and flow and with these fluctuations will come the requirement to reduce employment in an organization from time to time. The time to define the mechanism that will be used for evaluating work force requirements and for ultimately deciding who stays and who leaves is when the environment is stable. If management does not have a clearly defined retention system in readiness when the time comes to reduce their work force they can expect serious personnel problems. Even if they are able to achieve their headcount or budget targets they may well find that the surviving work force has been demoralized to the extent that productivity is reduced and the employees have little faith in managements' ability to function in an equitable manner. There is no guarantee that pre-planning will preclude the occurrence of this scenario but, if done with thoroughness, it should increase the likelihood of coming through the crisis with a reduced work force that is tailored effectively to handle the organization's work load. The choice of the word "crisis" in this discussion was made with forethought. The symbol in Cantonese for "crisis" is a combination of the symbols for "danger" and "opportunity." In the considered opinion of the authors, a reduction-in-force constitutes a true crisis; the elements of danger and opportunity are present and with skillful management an organization can survive the danger and use the opportunity to become stronger and more efficient.

Just as an organization's management should from time to time ask themselves, "what business are we in?" and "what business do we want to be in?" and then formulate policies and plans that will enable them to bridge the gap, so should they periodically consider the work that lies before them and the work force that is required for its successful completion. Our conclusions are intended to aid a manager or group of managers who are engaged in the work of choosing a retention system or appraising an existing system. The reader should bear in mind that there can be no universal retention system due to the wide range of interests encountered between industries, companies and even differing locales. Varying weights must be assigned to diverse factors such as technology, seniority, age, salaries, minority employees, and many others when deciding on the characteristics of an organization's work force. Similarly, when a reduction-in-force is indicated it should be possible to reshape the composition of these factors. As an example, consider an organization that is completing a high technology research and development activity and is about to go into a lengthy production run. The present work force may well be comprised of senior, highly-paid technical specialists in the engineering department and while there is a projected engineering function in the production phase it can be handled by less experienced, lower-paid, generalists. This picture may be further tempered by a desire to retain a small group of the aforementioned technical specialists in order to bid for future high technology efforts or to satisfy the provisions of a collective bargaining agreement. The question then becomes what retention criteria should be used in order to satisfy the various constraints in the most effective manner?

Obviously one could postulate an almost infinite number of situations that would in turn lead to the development of a host of unique retention systems. Our aim is not to engage in the design of specific systems but rather through the use of three "typical" retention systems to answer a series of questions with which a group of concerned managers may find themselves confronted. For the most part the answers are specific in nature because the three systems and organizations are "real" but where practical we have expanded our comments to be generic and hopefully have broad application.

A series of seven questions are addressed in the remainder of this section and in turn are answered on the basis of the conclusions reached by the authors after reviewing the results of our analyses as discussed in Chapters 1, 2, and 3 of this report.

<u>Question 1</u>: What happens when different retention systems are applied to a group of engineers?

<u>Answer</u>: The demographics associated with the group change in response to the emphasis placed on the evaluation criteria.

<u>Discussion</u>: The COMMOG retention system has been designed to place considerable emphasis on retaining the best performing employees while

the primary thrust of the GOVTG system is to keep qualified employees on the basis of seniority and military service. The AEROG system is based on recognizing an employee's present and past performance and provides some protection for employees with more than 20 years service.

The three diverse systems were applied to COMMOG and AEROG personnel (samples of 100 each) with somewhat varying results. The following summary depicts the range of values by which several characteristics associated with the remaining work force were changed by conducting simulated RIFs of 25% with the three retention systems.

EFFECT OF A 25% RIF ON THE
REMAINING WORK FORCE
RETENTION SYSTEM

| Characteristic | COMMOG | AEROG | GOVTG |
|---|---|---|---|
| Average Age | -2% to +1% | -4% to +2% | +4% |
| Vets as % of Force | -2% to +5% | -5% to +2% | -0% to +2% |
| Average Salary | +1% to +6% | +1% to +5% | +1% to +7% |
| Average Service | -1% to +19% | -4% to +22% | +19% to +25% |
| Average Grade | -0% to +2% | -0% to +2% | -0% to +4% |
| Average Performance Index | +21% | +20% | +1% to +19% |
| Minorities as % of Force | Insufficient data to evaluate | | |

As might be expected of a seniority-oriented system using the GOVTG system results in larger increases in age, salary, service, and grade for the remaining work force than does either the AEROG or COMMOG systems, and they in turn tend to increase the post-RIF performance index somewhat more than would the GOVTG systems. These data should be considered as trend data, inasmuch as the work forces they were derived from varied considerably with respect to pre-RIF characteristics of age, salary and service. For a more complete understanding of the effects of using these systems the reader is advised to consult Chapter 2.

Question 2: Do engineers understand the retention system by which they are rated?

Answer: Only marginally so.

Discussion: Understanding one's retention system appears to be a function of three things: (1) the degree to which the system is formalized and available in written material; (2) the communication system that exists within the organization; and (3) the personal relationship of the employee to his immediate supervisor (Note: supervisors almost universally had a very accurate understanding of their respective retention systems).

GOVTG engineers claimed to have the best understanding of any group with respect to their retention system and since as their system is available in approved published documentation this appears to be a reasonable claim. Unfortunately, GOVTG engineers did rather poorly in identifying the criteria that make up the retention system, while

COMMOG engineers did very well at correctly identifying the criteria that comprise their system and AEROG was in between. One of the oddities of this study involves the COMMOG engineer's perceptions of their familiarity with respect to the retention system, their communication system and the degree to which their concept of the retention system matches their supervisors. In each of these three areas they selected answers tending toward the low or negative side of the available choices while their actual knowledge was consistently higher than either GOVTGs or AEROGs. Part of this anomaly may be explained by the fact that 65% of the 13 COMMOG engineers who professed to be "unfamiliar" felt that the retention system was not uniformly applied and that the performance appraisals were not generally accurate compared to the balance of the COMMOG sample who responded 48% and 41% respectively to the same two issues. In the same vein, 65% of the 17 COMMOG engineers who listed "politics" as one of the top 4 present retention criteria, felt there was non-uniform application of the retention system and that the performance appraisal accuracy left something to be desired. This is compared to 43% and 35% in the balance of the group. Therefore, there appear to be some underlying frustrations within particular subgroups of COMMOG that could have caused emotional responses to some of the items on the questionnaire.

Question 3: How do engineers feel about the system by which they are rated? Do they want to change it?

Answer: More than 60% of all engineers surveyed rated their system as "fair" or "good." Similarly, when asked to compare their job security with their government or private sector counterpart, the answer came out "about the same" to "slightly lower."

To the question "would you change your system?," we received the lowest response rate of any of the 54 questions asked, 71.5%. Of those responding 60% said "no."

Discussion: While there is no overwhelming direct evidence of dissatisfaction with retention systems we did observe that the COMMOG engineers are pleased with their system while AEROG and GOVTG employees tend to be moderately negative toward their systems. The very strong, positive feeling on the part of COMMOG places the composite answer somewhat to the right of center, i.e. in a slightly favorable region.

The biggest single complaint (mentioned by all three groups) was "politics" in application of existing procedures. Politics was listed by all three groups as being one of the top four factors as they saw their present retention systems. From the comments we received to a related open-ended question in the survey, it was fairly obvious that politics meant cronyism or management favoritism. The most common response to "how would you change the system" was "eliminate politics" or "the system is O.K. if we would just get rid of politics."

Perhaps the most unexpected result uncovered by this exercise was an expression on the part of GOVTG employees that seniority and military service should be de-emphasized in their retention system and performance and technical competence should be the major criteria for retention. This expression was almost universal and was voiced by high seniority people and veterans as commonly as by junior people and non-veterans. In choosing to emphasize performance and technical competence GOVTG moved into exact agreement with COMMOG and AEROG employees. Similarly, all three organizations' managers chose performance and technical performance as the most important retention criteria.

Question 4: What bothers engineers and can cause either morale and/or productivity to decline?

Answer: Virtually anything over which they have little or no control and where management judgment is a prime consideration.

Discussion: The unanimous choice for the most disruptive factor in an engineer's environment was announcement of an impending RIF greatly in advance of when it is to begin. No group complained about too little warning; in a closely related area: "does your organization provide timely notice of adverse personnel actions?" One of the groups (whose people normally get only two weeks' notice) had a 68% "yes" response.

The second most disruptive factor was poor communications between the employer and employee. The third most disruptive factor was actually a combination of things mostly having to do with management actions that could be biased by politics. Chief among these were: (1) performance appraisals; (2) non-uniform application of retention system procedures; and (3) management intervention to declare certain individuals as having critical skills or key jobs.

Following the items listed above, most of the remaining concerns tended to be associated with the individual engineer; such as: a dead-end job, age (either too old or too young), out-of-date education, etc. The other category of concerns was how the management or the system treated women, racial minorities and older or higher paid individuals.

Two comments in passing that were of some interest in the study (1) AEROG engineers had the highest incidence of having received adverse actions and they were also the most non-plused or blasé about the impact of adverse actions on morale or productivity; and (2) while only about a fourth of the engineers in the survey had ever received an adverse action virtually everyone claimed to have personal knowledge of some less fortunate soul. Even assuming that many of the respondents are thinking of the same individual when they make their claim it appears likely that once adverse actions began to take place in an organization emotions run high until the RIF is officially announced as being complete.

<u>Question 5</u>: Is any sub-group of employees likely to differ markedly from their peers?

<u>Answer</u>: Yes, it can happen but it is not necessarily predictable.

<u>Discussion</u>: This is an area where intuition and horse sense don't always work for the manager. As we conducted this exercise we frequently postulated how various sub-groups would respond to certain questions or area of questioning. Our individual and team batting

averages were not too stellar. For example: we were of one opinion in predicting that the GOVTG employees who were military veterans would overwhelmingly list military service credit in their ideal retention system criteria. They did list it, but as 7th in importance!

On several other occasions we hypothesized that those people who had been subjected to a layoff, downgrade, or reduction in pay during their careers would be more negative in responding to certain questions than would be their non-affected counterparts. There was no single question wherein the answers to those who had been affected differed by more than a few percentage points from their non-affected members.

In subdividing the sample by age, we expected to see some shifts in patterns of response. To some extent we did but by far the most interesting and consistent shift was associated with the older group (those over 45 years old). This group tended to move in the direction of the management responses normally not quite as far as management but clearly more so than any other sub-group. We are firmly of the opinion that these older engineers are in lead positions and identify closely with management and management attitudes.

This may be a good point at which to address a commonly heard remark made with respect to federal civil service employees. The comment usually takes the form of "they don't do anything" or "they'd never make it in our company!" This exercise did not start out with the intention of addressing this issue and indeed we collected no data that can be brought to bear directly on the issue; but, we do feel that many of the questions we did ask are relevant. Those questions dealing with career goals and ideal retention system criteria coupled with the comparative demographies leads us to the conclusion that the statements quoted above are not valid generalizations. It appears on the basis of our study that civil service engineers have much the same set of values and attitudes as do their private sector counterparts.

While we are on comments frequently heard we would like to address one that is expressed from time to time by civil service employees, such as "we are underpaid" or "if only we made as much money as you guys in private industry." Again, we did not set out at the beginning of this exercise to either prove, disprove or even discuss this issue but along the way we collected sufficient data to say that these (like the earlier statements) are not valid generalizations. While there can be little doubt that senior civil service employees are underpaid compared to their private sector counterparts this does not appear to hold true for journeymen engineers. The average grade level for the sample of 100 GOVTG engineers is 13.6 which implies a salary of approximately $26,000 as compared to salaries of about $22,200 and $19,200 for the AEROG and COMMOG samples respectively. In the case of COMMOG, however, the relatively lower average salary is in part caused by (1) the engineering classification selected for the sample (i.e. occupational versus senior) and, (2) the much younger average age of the COMMOG sample as compared to GOVTG. In attempting to discredit these conceptions which are widely held by private sector and civil service engineers we are well aware that the data from one exercise (particularly one that did not have in mind at the outset to address these issues) is suspect and should not be taken as scientific proof that such conceptions are universally untrue. However, we feel strongly enough about this issue that we chose not to let this opportunity escape without our being heard. Government and private sector engineers interface daily at all levels and in numerous locales and to allow these attitudes and conceptions to go unchallenged is considered by the authors to be a disservice to the large majority of those individuals who are sincerely motivated to get a job done properly and in the most efficient manner.

Question 6: Do managers understand their employees? Can they communicate with them?

Answer: In general, managers do tend to capture the mood or inclination of their employees with respect to specific issues but they tend to overstate the employees' position when relating it to a third party (such as when answering questions in an interview or a questionnaire). And yes, managers think they can communicate with their employees.

Discussion: Consider the following example in which engineers and managers were asked: "Do you feel that your organization provides timely notice of pending adverse personnel actions?"

| | "Yes" |
|---|---|
| COMMOG | 71.8% |
| COMMOG MGMT | 85.0% |
| Δ(MGMT-ENG) | +13.2% |
| AEROG | 68.4% |
| AEROG MGMT | 86.0% |
| Δ(MGMT-ENG) | +17.6% |
| GOVTG | 75.0% |
| GOVTG MGMT | 86.7% |
| Δ(MGMT-ENG) | +11.7% |

Note that in each of these cases the "yes" responses by the engineers were within 6 or 7% of each other and the managers' responses were within 1 or 2% of each other; but the difference between engineers and their respective managers was from 12 to 18%! This shift of perceptions was obvious throughout this report when engineers and managers were asked identical questions.

The second part of the question, "Can managers communicate with their employees?" is much more difficult to generalize. Typically, about half of the engineers felt the communications between themselves and management was informative in nature while anywhere from 50 to 100% of the managers felt the communications were informative (AEROG managers claimed 50%, GOVTG managers said 93+% and COMMOG managers were unanimous in saying 100%).

In a similar vein about 60% of the engineers felt communications were accomplished unilaterally, while managers were just slightly prone to characterize communications as bilateral. Another example can be found in comparing managements' perception of the present retention system criteria to the actual criteria versus the engineers' perception (also matched to the actual criteria). Taken collectively managers' comprehension of the actual criteria used in their retention system was more than 93% while the engineers (again viewed collectively) scored 67%. It appears that managers understand things relatively well but are not as adept as they could be at communicating them to their employees.

Question 7: Do any of the organizations or systems that were surveyed appear to have either near-term or long-term major problems facing them?

Answer: Yes, AEROG will face a problem in administering their retention system without demoralizing a large portion of their work force sometime in the next three years. GOVTG appears to have a system that goes against the basic concept of how their employees would prefer to be evaluated for retainability purposes.

Discussion: AEROG, has a collective bargaining agreement with their engineers that provides for some protection for those employees with between 20 and 29 years service and considerable protection for employees with more than 30 years service. Forty percent of the 100 engineer AEROG sample have in excess of 20 years service and the average company service for the entire sample is 17.5 years. This would imply that no more than 3 years from now the average AEROG engineer will have some degree of protection from layoff in accordance with a legally enforceable collective bargaining agreement. If a RIF is conducted at any time in the next three years it will only serve to accelerate the problem. The problem will probably manifest itself in the form of demoralization and loss of productivity in the junior employees, i.e. those who are not afforded the protection that accompanies company service. The time for AEROG management to decide on a course of action is now!

GOVTG's problem is more subtle but may have long term morale and productivity implications. Consider the two lists below of ideal versus actual retention criteria wherein the ideal list is that submitted by the GOVTG engineers.

| Rank | Ideal Criteria | Actual Criteria |
|---|---|---|
| 1. | Performance | Seniority |
| 2. | Technical Competence | Military Service Credit |
| 3. | Seniority | Current Assignment |
| 4. | Critical Skill | Performance |
| 5. | Implementation of Regulations | Critical Skill |

This raises a central question: how can management expect good morale and high output from employees who know that the system by which they are being evaluated places performance fourth out of five criterion? It may also be questioned why a new college graduate (who is almost certain to be a non-veteran) would enter civil service if later reductions-in-force are likely. These are tough questions that should be occupying a considerable amount of the Civil Service Commission's time soon.

This thesis exercise has been of particular interest and significance to the authors inasmuch as all three of our sponsoring organizations are presently in a retrenchment mode of operation and each of us will be deeply involved for some time to come in administering reductions-in-force and attempting to keep our line organizations operating in an efficient manner.

Many of the results and conclusions reported in this thesis were anticipated and indeed were intuitively appealing; others were unanticipated and therefore more significant in our eyes. We feel strongly that while there is no valid universal retention system that almost any system could be made to work. The key to truly effective retention systems is communication--two-way communication between engineers and management. Managers need to listen to their employees and draw out their opinions relative to retention criteria and the degree to which the individual criterion should be weighted when they are merged into a retention system. Once having solicited the opinions of their employees (or the representatives of their employees) management should devise a system that balances the desires of the employees with the organization's business objectives. Regardless of the form that the management ultimately chooses for the retention system it is imperative that it be thoroughly explained to the employees who will be evaluated by it. The design of the system and the communication of it to the employees is best done when the business base is either stable or expanding. Any retention system is bound to draw some criticism but one announced during a period of declining business will be met with heartfelt emotion on the part of those most vulnerable to adverse action in addition to the normally anticipated constructive criticism.

The likelihood of management accomplishing a reduction-in-force without severely impacting the morale and productivity of the professional work force is, to a large extent, dependent on their ability to administer the retention system with impartiality. At the first sign of favortism or deviation from the known system the professional employee will start to worry about his own security and the collective morale and productivity of the work force will begin to plummet.

Similarly, if a reduction-in-force is said by management to be inevitable but no near term actions are discussed, morale and productivity will fall off. Managers need to 'belly up to the bar' when a RIF is inevitable and communicate their intent to the professional staff. This announcement should identify specific actions and the times when they will occur; further, no attempt should be made to mask the severity of the problem by announcing such actions incrementally.

Would that time were reversible and wholly elastic we would do some things differently in the course of preparing this thesis; chief among which would be:

(1) the re-design and expansion of the questionnaire in the area of "communications" and

(2) more analysis on the data that was collected via the questionnaire and interviews.

Close behind these two changes we would place our desire to gather data from more organizations (both industry and government) and to examine several additional, existing retention systems.

# APPENDIX A

## ANNOTATED QUESTIONNAIRE

### Questionnaire Cover Letter

Dear Respondent,

The enclosed questionnaire has been provided you through random selection, to obtain a representative sample of engineers' perceptions of their organizations' layoff and retention practices. Since a limited number of questionnaires were distributed, your response is very important to the analysis. An independent study is being made regarding the effects of retrenchment on the organization. Private industry (aerospace and communications firms) and government engineers are being polled. Questionnaire responses will be completely confidential, and original data will be destroyed as soon as it has been aggregated. Answers will be reported statistically, and in no case will the contents of individual questionnaires be revealed.

Please observe the following general instructions:

1. The questionnaire should require about 30 minutes to complete. Please fill out and return the questionnaire immediately upon receipt. The data cannot be analyzed until all questionnaires have been returned.
2. Answer all questions in order. Check or circle the most appropriate answer. Rank ordering is required by some questions (1-most important, etc.).

3. Your first reaction to the question reveals your true feelings; so do not spend a great deal of time thinking about your answer.

Your cooperation is greatly appreciated.

# ENGINEERING QUESTIONNAIRE

## ANNOTATED WITH VARIABLE AND VALUE LABELS

## A. VITAL STATISTICS

AGE
1. Please check your present age category:

| | | |
|---|---|---|
| 01 Under 20 | 05 35 to 40 | 09 55 to 60 |
| 02 20 to 25 | 06 40 to 45 | 10 over 60 |
| 03 25 to 30 | 07 45 to 50 | |
| 04 30 to 35 | 08 50 to 55 | |

SEX
2. Sex: 1 Male 2 Female

MIN
3. Member of a minority group: 1 Yes 2 No

MILS
4. Military service: 1 Disabled Veteran 2 Veteran 3 Non-Vet

5. Number of years employed in present-type job:

YRSI
Industry:

xx years permanent

___ years temporary

YRSG
Government:

xx years permanent

___ years temporary

HSYR
6. Education level: High School Diploma in 19xx.

COLL
7. Did you graduate from college? 1 Yes 2 No

| | | | |
|---|---|---|---|
| 01 ME | 05 CHEME | 09 METE | 13 BUS AD |
| 02 EE | 06 IE | 10 GEN E | 14 MULTIPLE |
| 03 AE | 07 MATH | 11 STR E | 00 NONE |
| 04 CIVE | 08 PHYS | 12 OTHER | |

COLL MAJ COLLYR

8. College Degree in______________________________________in 19xx.

GRADS

9. Did you attend Graduate School? 1 Yes 2 No

| | | | |
|---|---|---|---|
| 01 ME | 05 CHEME | 09 METE | 13 BUS AD |
| 02 EE | 06 IE | 10 GEN E | 14 MULTIPLE |
| 03 AE | 07 MATH | 11 STR E | 00 NONE |
| 04 GVE | 08 PHYS | 12 OTHER | |

GRADMAJ GRADYR

10. Graduate Degree in____________________________________in 19xx.

TITLE

11. What title best fits your current assignment?

| | | |
|---|---|---|
| 01 Manager | 05 Technical Specialist | 09 Staff Engineer |
| 02 Deputy or Assistant Manager | 06 Occupational Engineer | 10 Administrative |
| 03 Staff | 07 Senior Engineer | 11 Support Services |
| 04 Consultant | 08 Lead Engineer | 12 Other (specify) _______________ |

GNSP

PRICODE, SECCODE, TERTCODE 1 GEN 2 SPEC

12. Indicate the number of years you have spent in each category of total professional experience, specialty, or expertise:

| | | |
|---|---|---|
| 01 Program/Project Management | 06 Logistics | 10 Test |
| 02 Administration | 07 Configuration Management | 11 Development |
| 03 Support Services | 08 Financial Management | 12 Plant & Development |
| 04 Procurement | 09 Engineering Design | 13 Scientific Research |
| 05 Production | | 14 Other (specify) _______________ |

CARGO 01 → 10

13. Please rank those items below which you consider to be your career goals:

| | |
|---|---|
| 01 Improved Income | 06 Technical Competence |
| 02 Job Security | 07 Management Competence |
| 03 Personal Autonomy | 08 Meaningful Contribution |
| 04 Creativity | 09 Prestige |
| 05 Exercise of Power | 10 Other (specify) ____________ |

B. CHARACTERIZATION OF YOUR RETENTION SYSTEM

Organizations typically measure a professional engineer's worth with such factors as performance, experience, service, etc. In times of force reduction these measures play a key role in determining retainability. The following questions pertain to these issues.

14. Please check those items in the following list which, in your opinion, affect personnel retention in your present organization:

| | |
|---|---|
| 01 Performance | 07 Current Assignment |
| 02 Technical Competence | 08 Implementation of Applicable Federal or State Regulations |
| 03 Seniority | 09 Military Service Credit |
| 04 Tenure with the Organization | 10 Salary |
| 05 Critical Skill | 11 Union Agreement |
| 06 Politics (pull with management) | 12 Other (specify) ____________ |

PRETCR 1 → 12

15. Rank the factors checked in Question 14 in order of their importance in your retention system.

1 ______________________________
2 ______________________________
:
10 ______________________________

KNOW

16. To what extent are you familiar with the evaluation criteria of your retention system?

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Unfamiliar | Have Read | Somewhat Unfamiliar | Generally Familiar | Conversant |

C. YOUR PERCEPTION OF YOUR RETENTION SYSTEM

Please respond to the following questions with your conception of your organization's retention system.

JOBSEC

17. How do you rate your degree of job security in your present assignment with respect to comparable other sector (government or industry) jobs?

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Much Lower | Somewhat Lower | About the Same | Somewhat Higher | Much Higher |

EQUITY

18. How would you rate the equity of your retention system?

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Poor | Marginal | Fair | Good | Excellent |

AXOR

19. Whom do you hold responsible for cutbacks in personnel?

_1_ Personnel Office
_2_ Management
_3_ The Employees
_4_ The Administration
_5_ The Public
_6_ Mgt & Admin.
_7_ Admin & Pub
_8_ Economy
_9_ Other (specify) ________________

BAL

20. Do you perceive your organization's retention system as providing a reasonable, acceptable service of balancing organizational performance with personal protection? _1_ Yes _2_ No

What makes you say that?________________________________________

________________________________________________________________

UNIF
21. Do you feel that your retention system is applied uniformly across the various groups of the organization? 1 Yes 2 No

Why do you feel that way?______________________________

______________________________

22. To what extent do you feel "trapped" or immobile in the present retention system by:

| | 1 Not At All | 2 Barely | 3 Some-what | 4 Consid-erably | 5 Very |
|---|---|---|---|---|---|
| AGEIM a. Age | | | | | |
| EXPER b. Lack of Experience | | | | | |
| ED c. Out-of-date Education | | | | | |
| GEO d. Geographic Constraints | | | | | |
| FAM e. Family Considerations | | | | | |
| TEN f. Tenure Interruptions | | | | | |
| JOB g. Dead-end Job | | | | | |
| OTH h. Other (specify) ______ | | | | | |

CONSTR

23. To what extent do you feel that management is constrained to follow the published retention procedures and selectivity criteria?

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Unconstrained | General Guidelines | Follow the Intent Only | A Few Major Exceptions | To the Letter |

INTER

24. Do you feel that Management intervention to protect personnel in key jobs or performing key functions is warranted?

_1_ Yes _2_ No

Why do you feel that way? ______________________________

______________________________________________________

MATCH

25. Do you believe that your perception of your present retention system is virtually the same as that of your immediate supervisor's and higher-level management's? _1_ Yes _2_ No

Why? ______________________________________________

______________________________________________________

PERAP

26. Do you feel that performance appraisals are generally accurate?

_1_ Yes _2_ No

What are your reasons for this choice? ____________________

______________________________________________________

PROMO

27. In your opinion, how many promotions to higher levels of engineering or supervision are deserved?

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| None | A Few | Some | Most | All |

NOTICE
28. Do you feel that your organization provides timely notice of pending adverse personnel actions? _1_ Yes _2_ No

Why? ______________________________________________

______________________________________________

COMMO
29. How would you characterize communication between employer and employee during a reduction in force?

_1_ Unilateral and Formal, but Informative

_2_ Unilateral, but Superficial

_3_ Bilateral and Formal, but Informative

_4_ Bilateral, but Superficial

_5_ Other (specify) ____________________

30. What effect do you think that a long time-period between the initial personnel reduction announcement and its implementation has on:

| | 1<br>None | 2<br>A<br>Little | 3<br>Some | 4<br>Consid-<br>erable | 5<br>Much |
|---|---|---|---|---|---|
| MORALE<br>a. The Morale of The Personnel | | | | | |
| QUIT<br>b. Decisions to Quit | | | | | |
| TRANS<br>c. Decisions to Transfer | | | | | |
| RETE<br>d. Decisions to Retire Early | | | | | |
| RET<br>e. Decisions to Retire | | | | | |
| PRON<br>f. Productivity | | | | | |
| PROL<br>g. Productivity | | | | | |

EEO

31. Do you feel that personnel reductions generally have more impact on minority groups? _1_ Yes _2_ No

    Why? ______________________________________

    ______________________________________

LIB

32. Do you feel that personnel reductions generally have more impact on women? _1_ Yes _2_ No

    Why? ______________________________________

    ______________________________________

OLDER

33. Do you feel that personnel reductions generally have more impact on older employees? _1_ Yes _2_ No

    Why? ______________________________________

    ______________________________________

PAY

34. Do you feel that personnel reductions generally have more impact on the higher salaried people? _1_ Yes _2_ No

    Why? ______________________________________

    ______________________________________

BUMP

35. "Bumping" is a retention process in some organizations, whereby senior personnel whose jobs have been abolished may take the same classification jobs of less retainable personnel. If your organization uses "bumping," do you feel that its effects on productivity are justified by personnel retention preference? _1_ Yes _2_ No

    Why? ______________________________________

    ______________________________________

GRIND

36. Have you ever received an adverse personnel action, such as being laid off, reduced in level, reduced in grade, or in pay? _1_ Yes _2_ No (skip to Question 40)

TYPE

37. What type adverse action did you receive?

_1_ Layoff

_2_ Downgrade by 1 Level

_3_ Downgrade by 2 or more Levels

_4_ Reduction in Pay

_5_ Other (specify) ________

_6_ Multiple

WHEN

38. When was the adverse action taken? 19xx

RECOV

39. To what extent have you recovered (that is, regained comparable job level, position, or pay) from the adverse action?

_1_ Not

_2_ Partial

_3_ Fully

_4_ Unsure

XFER

40. Have you ever transferred, voluntarily or involuntarily, to avoid adverse action?

_1_ Yes, voluntarily

_2_ Yes, involuntarily

_3_ No (skip to 42)

FIT

41. To what extent was the new position related to your education and previous experience?

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Unrelated | Major Reorientation Required | Minor Reorientation Required | Generally Related | Directly Related |

DUCK

42. Have you ever quit a job to avoid adverse personnel action?

_1_ Yes _2_ No

BAILT
43. Do you know of engineers who have transferred to avoid adverse action? 1 Yes 2 No (skip to Question 45)

AFFT
44. How would they have been affected?

1 Layoff
2 Reduced Gd.
3 Undesirable Job/Location
4 Unaffected
5 Reduced and Job Changed
6 Layoff or Job Changed
7 Unsure

BAILQ
45. Do you know of engineers who quit to avoid adverse action?

1 Yes 2 No (skip to Question 47)

AFFQ
46. How would they have been affected?

1 Layoff
2 Reduced Gd.
3 Undesirable Job/Location
4 Unaffected
5 Reduced and Job Changed
6 Layoff or Job Changed
7 Unsure

BAILRE
47. Do you know of engineers who have retired early to avoid adverse action? 1 Yes 2 No (skip to Question 49)

AFFRE

48. How would they have been affected?

_1_ Layoff

_2_ Reduced GD

_3_ Undesirable Job/Location

_4_ Unaffected

_5_ Reduced and Job Changed

_6_ Layoff or Job Changed

_7_ Unsure

AWARD

49. How many awards given for outstanding or continuously superior performance do you feel are deserved?

| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| None | A Few | Some | Most | All |

TRANST

50. "Transitioning" is another retention process in some organizations, whereby senior personnel whose jobs have been abolished, but who cannot "bump," may take the jobs of less retainable personnel in other job classifications. Transitioning occurs only if the senior qualifies to fill this different job classification. If your organization uses this procedure, do you feel that its effects on productivity are justified by personnel retention preference? _1_ Yes _2_ No

    Why?______________________________________________

    __________________________________________________

D. YOUR IDEAL RETENTION SYSTEM

The following questions relate to factors which you might consider important to an ideal retention system.

51. Please check those items from the following list which you feel are appropriately considered in an ideal personnel retention system:

_01_ Performance

_02_ Technical Competence

_03_ Seniority

_04_ Tenure with the Organization

_05_ Politics (pull with management)

_06_ Critical Skill

07 Current Assignment

08 Implementation of Applicable Federal or State Regulations

09 Military Service Credit

10 Salary

11 Union Agreement

12 Other (specify)__________

IRETCR 1→12
52. Rank the factors checked in Question 51 in the order of importance for your ideal retention system.

1. ______________________________
2. ______________________________
.
.
.
10. ______________________________

SENIOR
53. If seniority is to be a critical factor in retention, which of the following definitions do you feel is the most appropriate?

1 Seniority Achieved within the Organization (Tenure)

2 Total Seniority Achieved at All Organizations

3 Total Seniority Plus Military Service Credit

4 Other

CHANGE
54. If you were in a position to do so, what improvements would you make to your personnel retention system to minimize any inequities or shortcomings?

1 New System

2 Major Modification

3 Minor Modification

4 No Change

5 Improved Implementation

0 Missing Value

# APPENDIX B

## COMMOG PHASE ONE

### COMMOG DATA BASE

TABLE B-1

COMMUNICATIONS INDUSTRY ENGINEERING SAMPLE USED FOR EXAMPLE REDUCTION IN FORCE

| Job Number | Employee Number | Service Comp. Date: Yr,Mo,Day | Seniority Pref. | Age | Years Service | Present Salary in $K[1] | Equivalent GS Level | 1970 Salary in $K[5] | Percent Salary Growth | Education Major | Highest Degree | Year of Degree | Veteran Status[2] | EEO Preference | Tech. Class 1[4] | Tech. Class 2[4] | Perf. Rank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.[3] | 112 | 451110 | Y | 53 | 30 | $19.3 | 13 | 13.0 | 48 | - | HSD | - | V | | 9 | 9 | 92 |
| 2. | 129 | 461022 | Y | 54 | 29 | 17.4 | 13 | 15.6 | 12 | I.E. | BS | 43 | V | | 9 | 4 | 97 |
| 3. | 107 | 500612 | Y | 49 | 25 | 22.0 | 13 | 15.0 | 47 | E.E. | BS | 50 | V | | 1 | 1 | 3 |
| 4. | 152 | 510201 | Y | 47 | 24 | 18.6 | 13 | 12.9 | 44 | E.G. | BS | 58 | V | | 4 | 4 | 90 |
| 5. | 121 | 530615 | Y | 45 | 22 | 17.9 | 13 | 13.5 | 33 | E.E. | BS | 53 | V | | 4 | 4 | 57 |
| 6. | 126 | 540916 | Y | 45 | 21 | 20.6 | 13 | 13.4 | 54 | - | HSD | - | N | | 8 | 8 | 78 |
| 7. | 175 | 560611 | | 56 | 19 | 16.2 | 13 | 12.8 | 27 | M.E. | BS | 56 | V | | 4 | 4 | 98 |
| 8. | 113 | 560618 | | 48 | 19 | 17.5 | 13 | 12.5 | 40 | I.E. | BS | 56 | V | | 9 | 9 | 100 |
| 9. | 164 | 570408 | | 42 | 18 | 17.8 | 13 | 13.8 | 29 | - | HSD | - | V | | 6 | 6 | 84 |
| 10. | 144 | 570422 | | 45 | 18 | 18.1 | 13 | 13.9 | 30 | - | HSD | - | N | | 4 | 4 | 51 |
| 11. | 173 | 570610 | | 40 | 18 | 21.2 | 13 | 15.0 | 45 | MET. | MS | 66 | N | | 10 | 4 | 17 |
| 12. | 148 | 570815 | | 43 | 18 | 18.2 | 13 | 12.5 | 46 | MATH | BS | 57 | N | | 7 | 7 | 82 |
| 13. | 159 | 580526 | | 40 | 17 | 18.4 | 13 | 13,1 | 40 | - | HSD | - | N | | 6 | 6 | 16 |
| 14. | 101 | 580602 | | 54 | 17 | 18.4 | 13 | 14.4 | 28 | I.E. | BS | 51 | V | | 9 | 2 | 80 |
| 15. | 170 | 580814 | | 45 | 17 | 20.2 | 13 | 14.2 | 42 | E.G. | BS | 58 | V | Y | 4 | 5 | 41 |

TABLE B-1 (Continued)

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16. | 161 | 581021 | 45 | 17 | 20.6 | 13 | 14.0 | 47 | - | HSD | - | V | 9 | 9 | 66 |
| 17. | 165 | 590202 | 45 | 16 | 19.6 | 13 | 13.2 | 48 | M.E. | BS | 59 | V | 10 | 4 | 43 |
| 18. | 119 | 590505 | 42 | 16 | 21.8 | 13 | 15.7 | 39 | MATH | MS | 60 | N | 8 | 8 | 18 |
| 19. | 123 | 590608 | 44 | 16 | 18.4 | 13 | 13.7 | 34 | M.E. | BS | 51 | V | 5 | 4 | 87 |
| 20. | 140 | 590706 | 40 | 16 | 20.9 | 13 | 13.1 | 60 | E.G. | BS | 59 | V | 2 | 2 | 22 |
| 21. | 106 | 590810 | 42 | 16 | 21.8 | 13 | 14.2 | 54 | MET | BS | 59 | V | 4 | 4 | 4 |
| 22. | 154 | 600118 | 43 | 15 | 18.4 | 13 | 13.3 | 38 | I.E. | BS | 59 | V | 7 | 7 | 96 |
| 23. | 180 | 600118 | 44 | 15 | 18.5 | 13 | 13.3 | 39 | GEN.E. | BS | 68 | V | 3 | 3 | 99 |
| 24. | 162 | 600125 | 41 | 15 | 20.2 | 13 | 13.9 | 45 | I.E. | MS | 74 | N | 9 | 9 | 74 |
| 25. | 111 | 600201 | 51 | 15 | 20.6 | 13 | 15.7 | 31 | M.E. | BS | 50 | V | 9 | 9 | 55 |
| 26. | 172 | 600229 | 44 | 15 | 20.4 | 13 | 12.8 | 59 | BUS.AD. | BS | 57 | V | 4 | 8 | 52 |
| 27. | 150 | 600314 | 48 | 15 | 19.1 | 13 | 13.7 | 39 | M.E. | MS | 61 | V | 5 | 4 | 73 |
| 28. | 105 | 600515 | 38 | 15 | 19.0 | 13 | 13.3 | 43 | PHY. | BA | 61 | V | 10 | 4 | 62 |
| 29. | 146 | 600613 | 38 | 15 | 18.8 | 13 | 12.5 | 50 | BUS.AD. | BS | 71 | V | 1 | 1 | 33 |
| 30. | 115 | 600803 | 46 | 15 | 18.7 | 13 | 12.2 | 53 | M.E. | MS | 74 | V | 4 | 5 | 76 |
| 31. | 183 | 600901 | 49 | 15 | 18.9 | 13 | 12.5 | 51 | ED. | BS | 51 | V | 4 | 8 | 85 |
| 32. | 143 | 600926 | 41 | 15 | 19.7 | 13 | 13.3 | 48 | CH.E. | BS | 59 | V | 4 | 5 | 72 |
| 33. | 142 | 601003 | 48 | 15 | 17.8 | 13 | 13.1 | 36 | M.E. | BS | 58 | V | 9 | 9 | 88 |
| 34. | 135 | 601027 | 40 | 15 | 18.8 | 13 | 12.7 | 48 | - | HSD | - | V | 4 | 10 | 49 |
| 35. | 125 | 610104 | 48 | 14 | 19.4 | 13 | 13.8 | 41 | E.E. | BS | 50 | V | 1 | 2 | 69 |
| 36. | 155 | 610605 | 40 | 14 | 17.3 | 13 | 14.0 | 24 | METAL | MS | 68 | V | 5 | 5 | 81 |
| 37. | 134 | 610605 | 37 | 14 | 21.1 | 13 | 11.4 | 85 | M.E. | BS | 61 | N | 4 | 10 | 21 |
| 38. | 139 | 610801 | 38 | 14 | 19.7 | 13 | 12.9 | 53 | E.E. | BS | 61 | N | 5 | 10 | 53 |
| 39. | 103 | 610914 | 52 | 14 | 18.4 | 13 | 12.9 | 43 | M.E. | BS | 58 | V | 9 | 9 | 91 |
| 40. | 187 | 611204 | 44 | 14 | 20.6 | 13 | 14.0 | 47 | - | HSD | - | V | 1 | 1 | 13 |

TABLE B-1 (Continued)

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41. | 109 | 620102 | 39 | 13 | 19.3 | 13 | 11.5 | 68 | GEN.E. | BS | 73 | N | 6 | 6 | 48 |
| 42. | 133 | 620131 | 56 | 13 | 20.1 | 13 | 13.7 | 47 | - | HSD | - | V | 4 | 5 | 70 |
| 43. | 176 | 620904 | 42 | 13 | 20.5 | 13 | 12.5 | 64 | - | HSD | - | V | 4 | 8 | 12 |
| 44. | 128 | 630211 | 36 | 12 | 21.1 | 13 | 12.2 | 73 | E.E. | BS | 63 | N | 7 | 7 | 5 |
| 45. | 117 | 641105 | 48 | 11 | 19.6 | 13 | 12.5 | 57 | M.E. | BS | 49 | N | 4 | 8 | 54 |
| 46. | 132 | 650426 | 43 | 10 | 19.7 | 13 | 11.0 | 79 | CHEM. | BS | 58 | V | 4 | 10 | 63 |
| 47. | 190 | 650609 | 33 | 10 | 21.9 | 13 | 12.8 | 71 | I.E. | BS | 65 | N | 4 | 8 | 8 |
| 48. | 197 | 650901 | 39 | 10 | 19.2 | 13 | 12.9 | 49 | - | HSD | - | V | 3 | 3 | 14 |
| 49. | 167 | 651101 | 38 | 10 | 18.5 | 13 | 10.0 | 85 | BUS.AD. | BS | 64 | N | 7 | 7 | 65 |
| 50. | 156 | 651227 | 49 | 10 | 17.9 | 13 | 14.4 | 24 | STAT. | BS | 50 | V | 4 | 8 | 95 |
| 51. | 118 | 660411 | 34 | 9 | 16.7 | 13 | 10.7 | 56 | E.E. | BS | 72 | V | 1 | 1 | 59 |
| 52. | 171 | 660808 | 37 | 9 | 17.3 | 13 | 12.8 | 35 | CHEM. | BS | 69 | N | 4 | 10 | 37 |
| 53. | 191 | 670130 | 41 | 8 | 21.9 | 13 | 15.8 | 39 | MET.E. | MS | 71 | V | 5 | 5 | 24 |
| 54. | 141 | 680129 | 40 | 7 | 20.5 | 13 | 13.8 | 49 | E.E. | BS | 53 | N | 2 | 2 | 36 |
| 55. | 157 | 680205 | 36 | 7 | 20.4 | 13 | 12.0 | 70 | E.E. | MS | 72 | N | 3 | 3 | 25 |
| 56. | 145 | 680215 | 43 | 7 | 19.2 | 13 | 12.4 | 55 | MATH | MS | 74 | V | 3 | 3 | 79 |
| 57. | 198 | 680217 | 45 | 7 | 21.7 | 13 | 13.2 | 64 | ARCH.E. | BS | 53 | V | 9 | 9 | 9 |
| 58. | 124 | 680327 | 36 | 7 | 19.8 | 13 | 12.2 | 62 | E.E. | MS | 72 | V | 3 | 3 | 2 |
| 59. | 160 | 680508 | 32 | 7 | 20.8 | 13 | 12.0 | 73 | M.E. | MS | 67 | V | 6 | 6 | 29 |
| 60. | 120 | 680527 | 31 | 7 | 22.0 | 13 | 11.3 | 95 | E.E. | MS | 71 | N | 5 | 5 | 1 |
| 61. | 137 | 680606 | 34 | 7 | 20.9 | 13 | 11.0 | 90 | E.E. | BS | 68 | N | 5 | 5 | 10 |
| 62. | 166 | 680624 | 35 | 7 | 20.6 | 13 | 12.5 | 65 | BUS.AD. | MS | 70 | V | 9 | 9 | 27 |
| 63. | 195 | 681010 | 37 | 7 | 17.4 | 13 | 10.0 | 74 | - | HSD | - | V | 5 | 5 | 35 |
| 64. | 194 | 681025 | 31 | 7 | 19.9 | 13 | 12.0 | 66 | I.E. | MS | 71 | V | 9 | 9 | 20 |
| 65. | 199 | 690228 | 28 | 6 | 17.9 | 13 | 11.7 | 53 | E.E. | MS | 74 | N | 5 | 3 | 75 |

TABLE B-1 (Continued)

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 66. | 114 | 690609 | 29 | 6 | 21.2 | 13 | 10.0 | 112 | M.E. | BS | 69 | N | | 6 | 6 | 19 |
| 67. | 196 | 690630 | 31 | 6 | 18.5 | 13 | ? | - | E.E. | MS | 69 | N | | 1 | 1 | 42 |
| 68. | 163 | 690908 | 38 | 6 | 21.9 | 13 | 12.9 | 85 | BUS.AD. | MS | 67 | V | | 4 | 4 | 26 |
| 69. | 130 | 690915 | 33 | 6 | 20.4 | 13 | 12.0 | 70 | E.E. | MS | 67 | V | | 5 | 5 | 15 |
| 70. | 189 | 691031 | 34 | 6 | 19.1 | 13 | 13.1 | 31 | I.E. | MS | 74 | N | Y | 6 | 6 | 39 |
| 71. | 110 | 691112 | 29 | 6 | 16.0 | 13 | 8.4 | 90 | CHEM. | BS | 68 | N | | 5 | 5 | 46 |
| 72. | 122 | 691126 | 31 | 6 | 17.2 | 13 | 12.0 | 43 | M.E. | MS | 66 | N | | 10 | 4 | 93 |
| 73. | 138 | 700112 | 34 | 5 | 19.6 | 13 | 12.0 | 63 | E.E. | BS | 69 | V | | 3 | 3 | 6 |
| 74. | 182 | 700126 | 29 | 5 | 16.6 | 13 | 8.2 | 102 | PHY. | BS | 69 | N | | 4 | 4 | 61 |
| 75. | 131 | 700202 | 28 | 5 | 17.8 | 13 | 10.3 | 73 | PHY. | BS | 70 | N | | 5 | 5 | 77 |
| 76. | 179 | 700202 | 28 | 5 | 18.2 | 13 | 10.5 | 73 | M.E. | BS | 70 | N | | 5 | 4 | 94 |
| 77. | 158 | 700209 | 28 | 5 | 17.1 | 13 | 10.6 | 61 | E.E. | MS | 74 | N | | 4 | 8 | 11 |
| 78. | 200 | 700209 | 30 | 5 | 17.9 | 13 | 11.6 | 54 | GER.E. | MS | 70 | N | | 5 | 5 | 83 |
| 79. | 102 | 700218 | 28 | 5 | 16.0 | 13 | 9.0 | 78 | I.E. | MS | 72 | N | | 7 | 7 | 40 |
| 80. | 149 | 700330 | 32 | 5 | 18.2 | 13 | 12.0 | 52 | M.E. | MS | 67 | N | | 4 | 5 | 60 |
| 81. | 168 | 700410 | 33 | 5 | 17.1 | 13 | 11.4 | 50 | E.E. | MS | 71 | N | | 3 | 3 | 30 |
| 82. | 185 | 700413 | 38 | 5 | 16.3 | 13 | 10.9 | 50 | PHY. | BS | 70 | N | | 1 | 1 | 68 |
| 83. | 186 | 700504 | 37 | 5 | 21.7 | 13 | 12.4 | 75 | E.E. | BS | 67 | N | | 3 | 1 | 7 |
| 84. | 108 | 700601 | 28 | 5 | 16.3 | 13 | 10.6 | 54 | GEN.E. | BS | 70 | N | | 4 | 10 | 50 |
| 85. | 104 | 700608 | 38 | 5 | 18.3 | 13 | 11.2 | 63 | E.E. | BS | 70 | N | | 5 | 5 | 89 |
| 86. | 184 | 700608 | 28 | 5 | 16.8 | 13 | 10.9 | 54 | GEN.E. | BS | 70 | N | | 3 | 3 | 38 |
| 87. | 127 | 700610 | 28 | 5 | 16.5 | 13 | 10.7 | 54 | GEN.E. | BS | 70 | N | | 5 | 8 | 45 |
| 88. | 147 | 700610 | 30 | 5 | 18.2 | 13 | 11.9 | 53 | GEN.E. | BS | 69 | N | | 4 | 5 | 28 |
| 89. | 177 | 700611 | 32 | 5 | 18.0 | 13 | 11.0 | 64 | I.E. | BS | 70 | N | | 9 | 9 | 32 |
| 90. | 181 | 700615 | 33 | 5 | 17.5 | 13 | 11.5 | 52 | E.E. | BS | 70 | N | | 5 | 5 | 56 |

TABLE B-1 (Continued)

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 91. | 136 | 700617 | 28 | 5 | 17.0 | 13 | 10.8 | 63 | E.E. | BS | 70 | N | 3 | 3 | 64 |
| 92. | 193 | 700617 | 37 | 5 | 20.2 | 13 | 12.0 | 68 | GEN.E. | BS | 70 | V | 10 | 4 | 23 |
| 93. | 178 | 700622 | 31 | 5 | 18.2 | 13 | 12.0 | 82 | M.E. | MS | 74 | N | 1 | 9 | 71 |
| 94. | 192 | 700727 | 51 | 5 | 21.1 | 13 | 14.4 | 47 | GEN.E. | BS | 58 | N | 9 | 9 | 47 |
| 95. | 116 | 700803 | 40 | 5 | 18.1 | 13 | 13.0 | 39 | PHY. | MS | 70 | N | 5 | 5 | 86 |
| 96. | 153 | 700803 | 29 | 5 | 17.5 | 13 | 10.9 | 61 | I.E. | BS | 70 | N | 4 | 8 | 34 |
| 97. | 188 | 700803 | 38 | 5 | 17.3 | 13 | 10.8 | 60 | E.E. | BS | 69 | N | 1 | 4 | 44 |
| 98. | 169 | 700808 | 54 | 5 | 21.7 | 13 | 15.9 | 36 | M.E. | BS | 43 | N | 4 | 10 | 31 |
| 99. | 174 | 700915 | 50 | 5 | 18.4 | 13 | 14.2 | 30 | PHY. | BS | 50 | N | 8 | 8 | 67 |
| 100. | 151 | 710608 | 43 | 4 | 18.1 | 13 | 14.0 | 29 | BUS.AD. | MS | 71 | N | 3 | 3 | 58 |

[1]Salary structure and job responsibilities for all communications engineers are equivalent to GS grade level GS-13.

[2]Veteran Status: N is a non-veteran, V is a veteran.

[3]Job numbers were assigned in sequence by seniority.

[4]Tech. class definitions given on Table B-2 of this appendix.

[5]Salary figures given in thousands.

TABLE B-2

COMMOG SAMPLE--TECHNICAL CLASSIFICATIONS

| Class No. | Description |
|---|---|
| 1 | Electrical apparatus engineering |
| 2 | Microwave engineering |
| 3 | Electronic test set engineering |
| 4 | Electrical component engineering |
| 5 | Semiconductor engineering |
| 6 | Piece parts, machine and tool design engineering |
| 7 | Industrial engineering |
| 8 | Quality control engineering |
| 9 | Plant and factory engineering |
| 10 | Chemical services engineering |

TABLE B-3

PHASE 1--COMMOG LAYOFF OF COMMOG
100 CASE SAMPLE

| Emp. No. | Age | Yrs. Serv. | EEO Pref. | Vet. Stat. | Perf. Rank | Tech.[1] Class 1 | Tech.[1] Class 2 | 1970[2] Sal. | 1975[2] Sal. |
|---|---|---|---|---|---|---|---|---|---|
| 152 | 47 | 24 | | V | 90 | 4 | 4 | 12.9 | 18.6 |
| 175 | 56 | 19 | | V | 98 | 4 | 4 | 12.8 | 16.2 |
| 113 | 48 | 19 | | V | 100 | 9 | 9 | 12.5 | 17.5 |
| 164 | 42 | 18 | | V | 84 | 6 | 6 | 13.8 | 17.8 |
| 123 | 44 | 16 | | V | 87 | 5 | 4 | 13.7 | 18.4 |
| 154 | 43 | 15 | | V | 96 | 7 | 7 | 13.3 | 18.4 |
| 180 | 44 | 15 | | V | 99 | 3 | 3 | 13.3 | 18.5 |
| 162 | 41 | 15 | | N | 74 | 9 | 9 | 13.9 | 20.2 |
| 115 | 46 | 15 | | V | 76 | 4 | 5 | 12.2 | 18.7 |
| 183 | 49 | 15 | | V | 85 | 4 | 8 | 12.5 | 18.9 |
| 142 | 48 | 15 | | V | 88 | 9 | 9 | 13.1 | 17.8 |
| 155 | 40 | 14 | | V | 81 | 5 | 5 | 14.0 | 17.3 |
| 103 | 52 | 14 | | V | 52 | 9 | 9 | 12.9 | 18.4 |
| 156 | 49 | 10 | | V | 95 | 4 | 8 | 14.4 | 17.9 |
| 141 | 40 | 7 | | N | 36 | 2 | 2 | 13.8 | 20.5 |
| 145 | 43 | 7 | | V | 79 | 3 | 3 | 12.4 | 19.2 |
| 199 | 28 | 6 | | N | 75 | 5 | 3 | 11.7 | 17.9 |
| 122 | 31 | 6 | | N | 93 | 10 | 4 | 12.0 | 17.2 |
| 179 | 28 | 5 | | N | 94 | 5 | 4 | 10.5 | 18.2 |
| 200 | 30 | 5 | | N | 83 | 5 | 5 | 11.6 | 17.9 |
| 104 | 38 | 5 | | N | 89 | 5 | 5 | 11.2 | 18.3 |
| 178 | 31 | 5 | | N | 71 | 1 | 9 | 12.0 | 18.2 |
| 116 | 40 | 5 | | N | 86 | 5 | 5 | 13.0 | 18.1 |
| 188 | 38 | 5 | | N | 44 | 1 | 4 | 10.8 | 17.3 |
| 151 | 43 | 4 | | N | 58 | 3 | 3 | 14.0 | 18.1 |

[1]Tech. class definitions given on Table B-2 of this appendix.

[2]Salary figures given in thousands.

TABLE B-4

PHASE 1--AEROG LAYOFF OF COMMOG
100 CASE SAMPLE

| Emp. No. | Age | Yrs. Serv. | EEO Pref. | Vet. Stat. | Perf. Rank | Tech.[1] Class 1 | Tech.[1] Class 2 | 1970[2] Sal. | 1975[2] Sal. |
|---|---|---|---|---|---|---|---|---|---|
| 175 | 56 | 19 | | V | 98 | 4 | 4 | 12.8 | 16.2 |
| 113 | 48 | 19 | | V | 100 | 9 | 9 | 12.5 | 17.5 |
| 164 | 42 | 18 | | V | 84 | 6 | 6 | 13.8 | 17.8 |
| 148 | 43 | 18 | | N | 82 | 7 | 7 | 12.5 | 18.2 |
| 101 | 54 | 17 | | V | 80 | 9 | 2 | 14.4 | 18.4 |
| 123 | 44 | 16 | | V | 87 | 5 | 4 | 13.7 | 18.4 |
| 154 | 43 | 15 | | V | 96 | 7 | 7 | 13.3 | 18.4 |
| 180 | 44 | 15 | | V | 99 | 3 | 3 | 13.3 | 18.5 |
| 162 | 41 | 15 | | N | 74 | 9 | 9 | 13.9 | 20.2 |
| 150 | 48 | 15 | | V | 73 | 5 | 4 | 13.7 | 19.1 |
| 115 | 46 | 15 | | V | 76 | 4 | 5 | 12.2 | 18.7 |
| 183 | 49 | 15 | | V | 85 | 4 | 8 | 12.5 | 18.9 |
| 142 | 48 | 15 | | V | 88 | 9 | 9 | 13.1 | 17.8 |
| 125 | 48 | 14 | | V | 69 | 1 | 2 | 13.8 | 19.4 |
| 155 | 40 | 14 | | V | 81 | 5 | 5 | 14.0 | 17.3 |
| 103 | 52 | 14 | | V | 91 | 9 | 9 | 12.9 | 18.4 |
| 156 | 49 | 10 | | V | 95 | 4 | 8 | 14.4 | 17.9 |
| 145 | 43 | 7 | | V | 79 | 3 | 3 | 12.4 | 19.2 |
| 122 | 31 | 6 | | N | 93 | 10 | 4 | 12.0 | 17.2 |
| 179 | 28 | 5 | | N | 94 | 5 | 4 | 10.5 | 18.2 |
| 200 | 30 | 5 | | N | 83 | 5 | 5 | 11.6 | 17.9 |
| 104 | 38 | 5 | | N | 89 | 5 | 5 | 11.2 | 18.3 |
| 116 | 40 | 5 | | N | 86 | 5 | 5 | 13.0 | 18.1 |
| 174 | 50 | 5 | | N | 67 | 8 | 8 | 14.2 | 18.4 |
| 151 | 43 | 4 | | N | 58 | 3 | 3 | 14.0 | 18.1 |

[1] Tech. class definitions given on Table B-2 of this appendix.

[2] Salary figures given in thousands.

TABLE B-5

PHASE 1--GOVTG LAYOFF OF COMMOG
100 CASE SAMPLE

| Emp. No. | Age | Yrs. Serv. | EEO Pref. | Vet. Stat. | Perf. Rank | Tech.[1] Class 1 | Tech.[1] Class 2 | 1970[2] Sal. | 1970[2] Sal. |
|---|---|---|---|---|---|---|---|---|---|
| 162 | 41 | 15 | | N | 74 | 9 | 9 | 13.9 | 20.2 |
| 109 | 39 | 13 | | N | 48 | 6 | 6 | 11.5 | 19.3 |
| 167 | 38 | 10 | | N | 65 | 7 | 7 | 10.0 | 18.5 |
| 114 | 29 | 6 | | N | 19 | 6 | 6 | 10.0 | 21.2 |
| 189 | 34 | 6 | Yes | N | 39 | 6 | 6 | 13.1 | 19.1 |
| 110 | 29 | 6 | | N | 46 | 5 | 5 | 8.4 | 16.0 |
| 131 | 28 | 5 | | N | 77 | 5 | 5 | 10.3 | 17.8 |
| 158 | 28 | 5 | | N | 11 | 4 | 8 | 10.6 | 17.1 |
| 200 | 30 | 5 | | N | 83 | 5 | 5 | 11.6 | 17.9 |
| 102 | 28 | 5 | | N | 40 | 7 | 7 | 9.0 | 16.0 |
| 149 | 32 | 5 | | N | 60 | 4 | 5 | 12.0 | 18.2 |
| 108 | 28 | 5 | | N | 50 | 4 | 10 | 10.6 | 16.3 |
| 104 | 38 | 5 | | N | 89 | 5 | 5 | 11.2 | 18.3 |
| 147 | 30 | 5 | | N | 28 | 4 | 5 | 11.9 | 18.2 |
| 177 | 32 | 5 | | N | 32 | 9 | 9 | 11.0 | 18.0 |
| 181 | 33 | 5 | | N | 56 | 5 | 5 | 11.5 | 17.5 |
| 136 | 28 | 5 | | N | 64 | 3 | 3 | 10.8 | 17.0 |
| 178 | 31 | 5 | | N | 71 | 1 | 9 | 12.0 | 18.2 |
| 192 | 51 | 5 | | N | 47 | 9 | 9 | 14.4 | 21.1 |
| 116 | 40 | 5 | | N | 86 | 5 | 5 | 13.0 | 18.1 |
| 153 | 29 | 5 | | N | 34 | 4 | 8 | 10.9 | 17.5 |
| 188 | 38 | 5 | | N | 44 | 1 | 4 | 10.8 | 17.3 |
| 169 | 54 | 5 | | N | 31 | 4 | 10 | 15.9 | 21.7 |
| 174 | 50 | 5 | | N | 67 | 8 | 8 | 14.2 | 18.4 |
| 151 | 43 | 4 | | N | 58 | 3 | 3 | 14.0 | 18.1 |

[1]Tech. class definitions given on Table B-2 of this appendix.

[2]Salary figures given in thousands.

# APPENDIX C

## AEROG PHASE ONE

### AEROG DATA BASE

TABLE C-1

AEROSPACE INDUSTRY ENGINEERING SAMPLE USED FOR REDUCTION IN FORCE

| Job Number | Employee Number | Service Comp. Date: Yr,Mo,Day | Age | Years Service | Present Salary in $K[1] | Equivalent GS Level | 1970 Salary in $K[2] | Percent Salary Growth | Education Major | Highest Degree | Year of Degree | Veteran Status[3] | EEO Preference | Sec. Skill Code[4] | Perf. Rank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.[3] | 214 | 360927 | 61 | 39 | $18.2 | 12 | 13.8 | 31 | - | HSD | - | N | | 12 | 85 |
| 2. | 258 | 391216 | 59 | 36 | 21.2 | 13 | 16.8 | 26 | A.E. | - | - | N | | 1 | 62 |
| 3. | 286 | 421004 | 56 | 33 | 21.8 | 13 | 17.8 | 23 | - | HSD | - | N | | 12 | 76 |
| 4. | 201 | 441003 | 53 | 31 | 23.0 | 13 | 18.4 | 25 | E.E. | BS | 50 | V | | 2 | 55 |
| 5. | 223 | 451019 | 58 | 30 | 22.5 | 13 | 17.8 | 27 | M.E. | BA | 48 | N | | 6 | 43 |
| 6. | 213 | 460304 | 45 | 29 | 21.5 | 13 | 21.9 | (2) | A.E. | BS | 45 | V | | 1 | 75 |
| 7. | 263 | 470102 | 51 | 28 | 23.7 | 13 | 17.0 | 39 | I.A. | BA | 51 | V | | 7 | 26 |
| 8. | 211 | 470825 | 52 | 28 | 23.4 | 13 | 19.8 | 18 | M.E. | - | - | V | Y | 3 | 57 |
| 9. | 246 | 480526 | 52 | 27 | 16.9 | 12 | 14.2 | 19 | E.E. | BS | 48 | V | | 2 | 96 |
| 10. | 230 | 480723 | 54 | 27 | 23.1 | 13 | 18.6 | 25 | M.E. | BS | 48 | V | | 3 | 40 |
| 11. | 206 | 480903 | 54 | 27 | 18.1 | 12 | 16.6 | 8 | E.E. | - | - | V | | 2 | 87 |
| 12. | 290 | 490202 | 49 | 26 | 21.1 | 13 | 20.7 | 1 | C.E. | - | - | V | | 4 | 64 |
| 13. | 221 | 490818 | 56 | 26 | 22.8 | 13 | 20.3 | 12 | A.E. | BS | 41 | N | | 1 | 41 |
| 14. | 222 | 490909 | 55 | 26 | 20.8 | 13 | 17.6 | 18 | E.E. | BS | 49 | V | | 2 | 72 |
| 15. | 281 | 501030 | 49 | 25 | 26.3 | 14 | 21.2 | 24 | E.E. | BS | 50 | V | | 2 | 42 |

TABLE C-1 (Continued)

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16. | 278 | 510115 | 53 | 24 | 25.6 | 14 | 18.9 | 36 | ARCH. | BS | 50 | N | | 6 | 21 |
| 17. | 234 | 510405 | 49 | 24 | 25.5 | 14 | 20.8 | 23 | A.E. | BS | 49 | V | | 1 | 14 |
| 18. | 255 | 510612 | 50 | 24 | 24.4 | 13 | 18.3 | 33 | P.CTL. | - | - | V | | 11 | 13 |
| 19. | 244 | 510615 | 51 | 24 | 20.2 | 12 | 15.1 | 34 | E.E. | BS | 51 | V | | 2 | 71 |
| 20. | 241 | 510730 | 50 | 24 | 18.9 | 12 | 19.4 | (3) | E.E. | BS | 50 | V | | 2 | 79 |
| 21. | 204 | 510814 | 50 | 24 | 26.3 | 14 | 20.4 | 34 | M.E. | BS | 51 | V | | 3 | 12 |
| 22. | 271 | 511123 | 51 | 24 | 22.4 | 13 | 18.9 | 18 | SFTY. | BS | 48 | V | | 9 | 67 |
| 23. | 210 | 511128 | 50 | 24 | 20.0 | 12 | 15.3 | 31 | I.A. | BS | 50 | V | | 11 | 12 |
| 24. | 215 | 520310 | 52 | 23 | 23.9 | 13 | 19.3 | 24 | GEOL. | BA | 50 | N | | 11 | 14 |
| 25. | 285 | 520713 | 52 | 23 | 22.4 | 13 | 15.3 | 46 | M.E. | BS | 50 | V | | 3 | 39 |
| 26. | 269 | 520806 | 46 | 23 | 32.5 | 15 | 25.1 | 29 | MATH | BS | 51 | V | | 5 | 15 |
| 27. | 275 | 521002 | 44 | 23 | 25.3 | 14 | 18.6 | 36 | M.E. | - | - | N | | 3 | 22 |
| 28. | 257 | 521120 | 51 | 23 | 22.1 | 13 | 17.0 | 30 | - | HSD | - | V | | 12 | 46 |
| 29. | 239 | 530327 | 54 | 22 | 17.3 | 12 | 13.8 | 25 | E.E. | BS | 52 | V | | 2 | 99 |
| 30. | 270 | 530610 | 53 | 22 | 26.7 | 14 | 19.3 | 38 | E.E. | - | - | V | Y | 2 | 18 |
| 31. | 224 | 530708 | 48 | 22 | 23.0 | 13 | 19.0 | 16. | E.E. | BS | 50 | V | | 2 | 44 |
| 32. | 251 | 530812 | 52 | 22 | 21.7 | 13 | 15.7 | 38 | CV.E. | BS | 49 | V | | 6 | 49 |
| 33. | 276 | 530911 | 52 | 22 | 22.0 | 13 | 20.0 | 10 | A.E. | BS | 50 | V | | 1 | 52 |
| 34. | 217 | 540125 | 49 | 21 | 21.4 | 14 | 21.4 | 18 | E.E. | BS | 49 | V | | 2 | 36 |
| 35. | 207 | 540325 | 50 | 21 | 20.5 | 13 | 20.5 | 18 | CV.E. | BS | 49 | V | | 6 | 27 |
| 36. | 216 | 541022 | 46 | 21 | 17.9 | 13 | 17.9 | 30 | E.E. | BS | 62 | N | | 2 | 38 |
| 37. | 219 | 541125 | 48 | 21 | 21.8 | 13 | 16.2 | 34 | SFTY. | BS | 54 | V | | 9 | 74 |
| 38. | 248 | 550502 | 48 | 20 | 24.5 | 13 | 18.9 | 30 | - | HSD | - | N | | 12 | 32 |
| 39. | 232 | 550725 | 47 | 20 | 22.7 | 13 | 18.4 | 23 | M.E. | BS | 53 | V | | 3 | 54 |
| 40. | 287 | 550906 | 50 | 20 | 24.5 | 13 | 18.9 | 30 | FSTRY. | MA | 56 | N | | 11 | 33 |

TABLE C-1 (Continued)

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 41. | 288 | 551225 | 46 | 19 | 20.8 | 13 | 16.9 | 23 | M.E. | BS | 51 | V | | 3 | 93 |
| 42. | 265 | 560503 | 50 | 19 | 22.6 | 13 | 18.4 | 23 | OCEAN | MS | 56 | V | | 11 | 51 |
| 43. | 202 | 560528 | 50 | 19 | 28.1 | 15 | 21.8 | 29 | MNG. | BS | 49 | V | | 11 | 4 |
| 44. | 242 | 560612 | 53 | 19 | 20.8 | 13 | 16.6 | 25 | E.E. | BS | 56 | V | | 2 | 63 |
| 45. | 229 | 560820 | 52 | 19 | 25.6 | 14 | 19.0 | 35 | M.E. | BS | 47 | V | | 3 | 23 |
| 46. | 238 | 560830 | 52 | 19 | 28.6 | 15 | 22.5 | 27 | BUS.AD. | BA | 52 | V | | 10 | 8 |
| 47. | 295 | 570121 | 56 | 18 | 21.3 | 13 | 16.6 | 28 | BUS.AD. | MBA | 62 | N | | 10 | 98 |
| 48. | 282 | 570219 | 52 | 18 | 20.2 | 13 | 19.5 | 2 | - | HSD | - | V | | 12 | 73 |
| 49. | 220 | 570228 | 48 | 18 | 19.6 | 12 | 17.6 | 11 | M.E. | BS | 51 | V | | 3 | 66 |
| 50. | 296 | 570610 | 49 | 18 | 20.7 | 13 | 15.7 | 32 | PHYS. | BS | 64 | V | | 8 | 68 |
| 51. | 254 | 570817 | 44 | 18 | 23.2 | 13 | 18.6 | 25 | I.E. | BS | 59 | V | Y | 7 | 35 |
| 52. | 256 | 580111 | 40 | 17 | 20.0 | 12 | 13.1 | 53 | E.E. | BS | 61 | V | | 2 | 78 |
| 53. | 264 | 580613 | 39 | 17 | 24.6 | 14 | 18.3 | 34 | M.E. | BS | 60 | V | | 5 | 28 |
| 54. | 279 | 580625 | 42 | 17 | 29.4 | 15 | 20.8 | 41 | CV.E. | BS | 61 | V | | 6 | 3 |
| 55. | 291 | 580804 | 39 | 17 | 24.5 | 13 | 18.8 | 30 | M.E. | BS | 58 | N | | 3 | 15 |
| 56. | 249 | 580911 | 39 | 17 | 21.2 | 13 | 16.0 | 33 | E.E. | BS | 58 | N | | 2 | 77 |
| 57. | 237 | 580930 | 51 | 17 | 23.0 | 13 | 16.6 | 38 | M.E. | BS | 58 | N | | 3 | 47 |
| 58. | 225 | 581020 | 53 | 17 | 27.3 | 15 | 19.5 | 40 | M.E. | BS | 50 | V | | 3 | 10 |
| 59. | 243 | 581208 | 52 | 17 | 28.4 | 15 | 21.3 | 33 | E.E. | BS | 48 | V | | 2 | 9 |
| 60. | 272 | 590228 | 54 | 16 | 25.6 | 14 | 19.8 | 29 | M.E. | BS | 49 | N | | 3 | 11 |
| 61. | 298 | 590408 | 44 | 16 | 17.9 | 12 | 17.0 | 5 | MAIN. | BS | 57 | V | | 11 | 88 |
| 62. | 266 | 590428 | 56 | 16 | 22.0 | 13 | 17.3 | 27 | - | HSD | - | N | | 12 | 89 |
| 63. | 267 | 590610 | 49 | 16 | 24.4 | 13 | 17.9 | 36 | E.E. | BS | 59 | V | Y | 2 | 25 |
| 64. | 245 | 590622 | 45 | 16 | 27.8 | 15 | 21.8 | 27 | E.E. | BS | 59 | V | | 2 | 5 |
| 65. | 250 | 590706 | 39 | 16 | 28.2 | 15 | 21.6 | 31 | GEN.E. | BS | 59 | N | | 11 | 2 |

TABLE C-1 (Continued)

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 66. | 233 | 591011 | 39 | 16 | 25.0 | 14 | 21.3 | 17 | BUS.AD | MA | 72 | N | 10 | 13 |
| 67. | 293 | 600307 | 43 | 15 | 21.1 | 13 | 16.0 | 32 | SFTY. | BS | 59 | V | 9 | 61 |
| 68. | 209 | 600328 | 43 | 15 | 24.2 | 13 | 19.1 | 27 | E.E. | BS | 60 | V | 2 | 24 |
| 69. | 218 | 600711 | 48 | 15 | 23.3 | 13 | 18.1 | 29 | E.E. | BS | 50 | V | 2 | 31 |
| 70. | 231 | 610220 | 47 | 14 | 20.9 | 13 | 20.0 | 4 | C.E. | BS | 54 | N | 4 | 65 |
| 71. | 247 | 610427 | 42 | 14 | 18.5 | 12 | 14.3 | 29 | M.E. | BS | 61 | V | 3 | 82 |
| 72. | 262 | 610703 | 38 | 14 | 25.9 | 14 | 18.0 | 44 | A.E. | BS. | 61 | N | 1 | 17 |
| 73. | 240 | 620307 | 56 | 13 | 24.7 | 14 | 19.1 | 29 | MNG.E. | BS | 49 | V | 11 | 19 |
| 74. | 300 | 620319 | 54 | 13 | 17.6 | 12 | 18.6 | (6) | E.E. | - | - | V | 2 | 59 |
| 75. | 268 | 620424 | 44 | 13 | 24.5 | 13 | 18.0 | 36 | M.E. | BS | 59 | V | 3 | 69 |
| 76. | 235 | 621004 | 40 | 13 | 18.3 | 12 | 17.6 | 4 | E.E. | - | - | V | 2 | 84 |
| 77. | 283 | 621112 | 39 | 13 | 21.2 | 13 | 18.7 | 13 | M.E. | BS | 57 | V | 3 | 48 |
| 78. | 294 | 630802 | 56 | 12 | 18.8 | 12 | 18.0 | 4 | M.E. | BS | 42 | N | 3 | 81 |
| 79. | 277 | 640820 | 40 | 11 | 18.9 | 12 | 15.8 | 19 | E.E. | BS | 62 | V | 2 | 80 |
| 80. | 252 | 650122 | 54 | 10 | 25.4 | 14 | 19.0 | 34 | PHYS. | MA | 49 | V | 8 | 56 |
| 81. | 261 | 660205 | 34 | 9 | 21.2 | 13 | 15.1 | 40 | E.E. | - | - | N | 2 | 29 |
| 82. | 273 | 660215 | 47 | 9 | 24.5 | 13 | 18.7 | 31 | GEN.E. | BS | 50 | V | 11 | 30 |
| 83. | 228 | 660228 | 53 | 9 | 23.9 | 13 | 18.7 | 28 | E.E. | BS | 47 | V | 2 | 7 |
| 84. | 203 | 660727 | 38 | 9 | 25.6 | 14 | 19.6 | 31 | BUS.AD. | MA | 66 | N | 10 | 6 |
| 85. | 289 | 670225 | 33 | 8 | 25.8 | 14 | 17.4 | 48 | GEN.E. | MS | 67 | N | 12 | 16 |
| 86. | 212 | 670429 | 54 | 8 | 18.6 | 12 | 14.7 | 27 | M.E. | BS | 53 | N | 3 | 92 |
| 87. | 292 | 670927 | 34 | 8 | 19.8 | 12 | 14.1 | 40 | ACTG. | MBA | 72 | N | 10 | 40 |
| 88. | 227 | 680105 | 30 | 7 | 18.4 | 12 | 12.9 | 43 | AV.MGT. | BS | 67 | N | 1 | 34 |
| 89. | 297 | 681121 | 54 | 7 | 24.2 | 13 | 19.3 | 25 | A.E. | MS | 61 | V | 1 | 60 |
| 90. | 236 | 690112 | 56 | 6 | 18.1 | 12 | 12.9 | 40 | M.E. | BS | 48 | V | 3 | 53 |

TABLE C-1 (Continued)

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 91. | 226 | 691206 | 29 | 6 | 15.8 | 10 | 11.4 | 39 | CV.E. | BS | 68 | N | 6 | 94 |
| 92. | 299 | 701201 | 43 | 5 | 23.4 | 13 | 15.2 | 54 | BUS.A. | MA | 73 | V | 10 | 37 |
| 93. | 205 | 720705 | 35 | 3 | 16.0 | 10 | ? | 36[5] | E.E. | BS | 67 | V | 2 | 91 |
| 94. | 280 | 721017 | 31 | 3 | 17.5 | 12 | ? | 43[5] | SFTY. | BS | 71 | N | 9 | 70 |
| 95. | 253 | 721116 | 29 | 3 | 15.9 | 10 | ? | 48[5] | E.E. | BS | 72 | V | 2 | 86 |
| 96. | 274 | 730123 | 44 | 2 | 19.5 | 12 | ? | 29[5] | MIL.S. | BA | 65 | V | 11 | 83 |
| 97. | 284 | 730607 | 25 | 2 | 13.9 | 10 | ? | 38[5] | E.E. | BS | 73 | N | 2 | 97 |
| 98. | 259 | 730705 | 24 | 2 | 13.9 | 10 | ? | 50[5] | E.E. | BS | 73 | N | 2 | 95 |
| 99. | 208 | 740715 | 23 | 1 | 14.0 | 07 | ? | 45[5] | M.E. | BS | 74 | N | 3 | 100 |
| 100. | 260 | 750113 | 46 | 1 | 24.5 | 14 | ? | 33[5] | - | HSD | - | V | 12 | 45 |

[1]Per annum salary shown and approximate GS grade level equivalent shown in parenthesis.

[2]Salary figures given in thousands.

[3]Veteran status: N is a non-veteran, V is a veteran.

[4]Secondary skill code definitions given on Table C-2 of this appendix.

[5]Job numbers were assigned in sequence by seniority.

Abbreviations used in this table include:

| | | | |
|---|---|---|---|
| HSD | High School Diploma | ARCH. | Architectural |
| A.E. | Aeronautical Engineer | P. CTL. | Production Control |
| E.E. | Electrical Engineer | SFTY. | Safety Engineer |
| M.E. | Mechanical Engineer | GEOL. | Geologist |
| I.A. | Industrial Arts | CV.E. | Civil Engineer |
| C.E. | Chemical Engineer | FSTRY. | Forestry |
| OCEAN | Oceanography | MNG. | Mining Engineer |
| BUS.A. | Business Administration | PHYS. | Physics |
| I.E. | Industrial Engineer | MAIN. | Maintenance Engineer |
| GEN.E. | General Engineer | ACTG. | Accounting |

TABLE C-2

AEROG SAMPLE--SECONDARY SKILL CODES

| Code No. | Description |
|---|---|
| 1 | Aeronautical engineering |
| 2 | Electrical engineering |
| 3 | Mechanical engineering |
| 4 | Chemical engineering |
| 5 | Mathematics |
| 6 | Civil engineering |
| 7 | Industrial engineering |
| 8 | Physics |
| 9 | Safety |
| 10 | Accounting and business |
| 11 | Other |
| 12 | Unknown |

TABLE C-3

PHASE 1--AEROG LAYOFF OF AEROG 100 CASE SAMPLE

| Employ-ee No. | Age | Yrs. Serv. | Sen. Pref. | EEO Pref. | Vet. Stat. | Perf. Rank | Sec.[1] Skill Code | 1970[2] Sal. | 1975[2] Sal. | Salary Growth % |
|---|---|---|---|---|---|---|---|---|---|---|
| 288 | 46 | 19 | | | V | 93 | 3 | 16.9 | 20.8 | 23 |
| 265 | 50 | 19 | | | V | 51 | 11 | 18.4 | 22.6 | 23 |
| 242 | 53 | 19 | | | V | 63 | 2 | 16.6 | 20.8 | 25 |
| 295 | 56 | 18 | | | N | 98 | 10 | 16.6 | 21.3 | 28 |
| 282 | 52 | 18 | | | V | 73 | 12 | 19.5 | 20.2 | 2 |
| 220 | 48 | 18 | | | V | 66 | 3 | 17.6 | 19.6 | 11 |
| 296 | 49 | 18 | | | V | 68 | 8 | 15.7 | 20.7 | 32 |
| 249 | 39 | 17 | | | N | 77 | 2 | 16.0 | 21.2 | 33 |
| 298 | 44 | 16 | | | V | 88 | 11 | 17.0 | 17.9 | 5 |
| 266 | 56 | 16 | | | N | 89 | 12 | 17.3 | 22.0 | 27 |
| 231 | 47 | 14 | | | N | 65 | 4 | 20.0 | 20.9 | 4 |
| 247 | 42 | 14 | | | V | 82 | 3 | 14.3 | 18.5 | 29 |
| 300 | 54 | 13 | | | V | 59 | 2 | 18.6 | 17.6 | (6) |
| 235 | 40 | 13 | | | V | 84 | 2 | 17.6 | 18.3 | 4 |
| 283 | 39 | 13 | | | V | 48 | 3 | 18.7 | 21.2 | 13 |
| 294 | 56 | 12 | | | N | 81 | 3 | 18.0 | 18.8 | 4 |
| 277 | 40 | 11 | | | V | 80 | 2 | 15.8 | 18.9 | 19 |
| 212 | 54 | 8 | | | N | 92 | 3 | 14.7 | 18.6 | 27 |
| 297 | 54 | 7 | | | V | 60 | 1 | 19.3 | 24.2 | 25 |
| 226 | 29 | 6 | | | N | 94 | 6 | 11.4 | 15.8 | 39 |
| 205 | 35 | 3 | | | V | 91 | 2 | ? | 16.0 | 36[3] |
| 274 | 44 | 2 | | | V | 83 | 11 | ? | 19.5 | 29[3] |
| 284 | 25 | 2 | | | N | 97 | 2 | ? | 13.9 | 38[3] |
| 295 | 24 | 2 | | | N | 95 | 2 | ? | 13.9 | 50[3] |
| 208 | 23 | 1 | | | N | 100 | 3 | ? | 14.0 | 45[3] |

[1]Secondary skill code definitions given on Table C-2 of this appendix.

[2]Salary figures given in thousands.

[3]Approximate values.

TABLE C-4

PHASE 1--COMMOG LAYOFF OF AEROG 100 CASE SAMPLE

| Employee No. | Age | Yrs. Serv. | Sen. Pref. | EEO Pref. | Vet. Stat. | Perf. Rank | Sec. Skill Code[1] | 1970 Sal.[2] | 1975 Sal.[2] | Salary Growth % |
|---|---|---|---|---|---|---|---|---|---|---|
| 214 | 61 | 39 | Yes | | N | 85 | 12 | 13.8 | 18.2 | 31 |
| 258 | 59 | 36 | Yes | | N | 62 | 1 | 16.8 | 21.2 | 26 |
| 213 | 45 | 29 | Yes | | V | 75 | 1 | 21.9 | 21.5 | (2) |
| 246 | 52 | 27 | Yes | | V | 96 | 2 | 14.2 | 16.9 | 19 |
| 206 | 54 | 27 | Yes | | V | 87 | 2 | 16.6 | 18.1 | 8 |
| 290 | 49 | 26 | Yes | | V | 64 | 4 | 20.7 | 21.0 | 1 |
| 271 | 51 | 24 | Yes | | V | 67 | 9 | 18.9 | 22.4 | 18 |
| 210 | 50 | 24 | Yes | | V | 12 | 11 | 15.3 | 20.0 | 31 |
| 239 | 54 | 22 | Yes | | V | 99 | 2 | 13.8 | 17.3 | 25 |
| 288 | 46 | 19 | | | V | 93 | 3 | 16.9 | 20.8 | 23 |
| 295 | 56 | 18 | | | N | 98 | 10 | 16.6 | 21.3 | 28 |
| 296 | 49 | 18 | | | V | 68 | 8 | 15.7 | 20.7 | 32 |
| 298 | 44 | 16 | | | V | 88 | 11 | 17.0 | 17.9 | 5 |
| 266 | 56 | 16 | | | N | 89 | 12 | 17.3 | 22.0 | 27 |
| 231 | 47 | 14 | | | N | 65 | 4 | 20.0 | 20.9 | 4 |
| 247 | 42 | 14 | | | V | 82 | 3 | 14.3 | 18.5 | 29 |
| 294 | 56 | 12 | | | N | 81 | 3 | 18.0 | 18.8 | 4 |
| 212 | 54 | 8 | | | N | 92 | 3 | 14.7 | 18.6 | 27 |
| 297 | 54 | 7 | | | V | 60 | 1 | 19.3 | 24.2 | 25 |
| 226 | 29 | 6 | | | N | 94 | 6 | 11.4 | 15.8 | 39 |
| 280 | 31 | 3 | | | N | 73 | 9 | ? | 17.5 | 43[3] |
| 253 | 29 | 3 | | | V | 86 | 2 | ? | 15.9 | 48[3] |
| 284 | 25 | 2 | | | N | 97 | 2 | ? | 13.9 | 38[3] |
| 259 | 24 | 2 | | | N | 95 | 2 | ? | 13.9 | 50[3] |
| 208 | 23 | 1 | | | N | 100 | 3 | ? | 14.0 | 45[3] |

[1] Secondary skill code definitions given on Table C-2 of this appendix.

[2] Salary figures given in thousands.

[3] Approximate values.

TABLE C-5

PHASE 1--GOVTG LAYOFF OF AEROG 100 CASE SAMPLE

| Employee No. | Age | Yrs. Serv. | Sen. Pref. | EEO Pref. | Vet. Stat. | Perf. Rank | Sec.[1] Skill Code | 1970[2] Sal. | 1975[2] Sal. | Salary Growth % |
|---|---|---|---|---|---|---|---|---|---|---|
| 214 | 61 | 39 | Yes | | N | 85 | 12 | 13.8 | 18.2 | 31 |
| 244 | 51 | 24 | Yes | | V | 71 | 2 | 15.1 | 20.2 | 34 |
| 241 | 50 | 24 | Yes | | V | 79 | 2 | 19.4 | 18.9 | (3) |
| 210 | 50 | 24 | Yes | | V | 12 | 11 | 15.3 | 20.0 | 31 |
| 239 | 54 | 22 | Yes | | V | 99 | 2 | 13.8 | 17.3 | 25 |
| 220 | 48 | 18 | | | V | 66 | 3 | 17.6 | 19.6 | 11 |
| 256 | 40 | 17 | | | V | 78 | 2 | 13.1 | 20.0 | 53 |
| 298 | 44 | 16 | | | V | 88 | 11 | 17.0 | 17.9 | 5 |
| 247 | 42 | 14 | | | V | 82 | 3 | 14.3 | 18.5 | 29 |
| 300 | 54 | 13 | | | V | 59 | 2 | 18.6 | 17.6 | (6) |
| 235 | 40 | 13 | | | V | 84 | 2 | 17.6 | 18.3 | 4 |
| 294 | 56 | 12 | | | N | 81 | 3 | 18.0 | 18.8 | 4 |
| 277 | 40 | 11 | | | V | 80 | 2 | 15.8 | 18.9 | 19 |
| 212 | 54 | 8 | | | N | 92 | 3 | 14.7 | 18.6 | 27 |
| 292 | 34 | 8 | | | N | 40 | 10 | 14.1 | 19.8 | 40 |
| 227 | 30 | 7 | | | N | 34 | 1 | 12.9 | 18.4 | 43 |
| 236 | 56 | 6 | | | V | 53 | 3 | 12.9 | 18.1 | 40 |
| 226 | 29 | 6 | | | N | 94 | 6 | 11.4 | 15.8 | 39 |
| 205 | 35 | 3 | | | V | 91 | 2 | ? | 16.0 | 36[3] |
| 280 | 31 | 3 | | | N | 70 | 9 | ? | 17.5 | 43[3] |
| 253 | 29 | 3 | | | V | 86 | 2 | ? | 15.9 | 48[3] |
| 274 | 44 | 2 | | | V | 85 | 11 | ? | 19.5 | 29[3] |
| 284 | 25 | 2 | | | N | 97 | 2 | ? | 13.9 | 38[3] |
| 259 | 24 | 2 | | | N | 95 | 2 | ? | 13.9 | 50[3] |
| 208 | 23 | 1 | | | N | 100 | 3 | ? | 14.0 | 45[3] |

[1] Secondary skill code definitions given on Table C-2 of this appendix.

[2] Salary figures given in thousands.

[3] Approximate values.

# APPENDIX D

## GOVERNMENT RETENTION SYSTEM--PHASE ONE

## EXAMPLE REDUCTION IN FORCE

TABLE D-1

RETENTION REGISTER (COMMUNICATIONS INDUSTRY SAMPLE)

| | Job No. | Employee | Service Comp. Date:Yr | Mo | Day | Action |
|---|---|---|---|---|---|---|
| C.L. 1093 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 1 | 112 | 45 | 11 | 10 | |
| | 2 | 129 | 46 | 10 | 22 | |
| | 8 | 113 | 56 | 06 | 18 | Job Abolished |
| | 14 | 100 | 58 | 06 | 02 | |
| | 16 | 161 | 58 | 10 | 21 | Job Abolished |
| | 25 | 117 | 60 | 02 | 01 | |
| | 33 | 142 | 60 | 10 | 03 | |
| | 39 | 103 | 61 | 09 | 15 | |
| | 57 | 198 | 68 | 02 | 17 | |
| | 62 | 166 | 68 | 06 | 24 | |
| | 64 | 194 | 68 | 10 | 25 | |
| Tenure Group 1B | 24 | 162 | 60 | 01 | 25 | |
| | 89 | 177 | 70 | 06 | 11 | Job Abolished |
| | 94 | 192 | 70 | 07 | 27 | |
| C.L. 1013 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 3 | 107 | 50 | 12 | 06 | |
| | 29 | 146 | 60 | 06 | 13 | |
| | 35 | 125 | 61 | 01 | 04 | |
| | 40 | 187 | 61 | 12 | 04 | |
| | 51 | 118 | 66 | 04 | 11 | |
| Tenure Group 1B | 67 | 196 | 69 | 06 | 30 | |
| | 93 | 178 | 70 | 06 | 22 | |
| | 97 | 188 | 70 | 08 | 03 | Job Abolished |
| C.L. 1043 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 4 | 152 | 51 | 02 | 01 | |
| | 5 | 121 | 53 | 06 | 15 | |
| | 7 | 175 | 56 | 06 | 11 | |
| | 15 | 170 | 58 | 08 | 14 | Job Abolished |
| | 21 | 106 | 59 | 08 | 10 | |
| | 26 | 172 | 60 | 02 | 29 | |
| | 30 | 115 | 60 | 08 | 03 | |
| | 31 | 183 | 60 | 09 | 01 | |
| | 32 | 143 | 60 | 09 | 26 | |
| | 34 | 135 | 60 | 10 | 27 | Job Abolished |
| | 42 | 133 | 62 | 01 | 31 | |
| | 43 | 176 | 62 | 09 | 04 | |

TABLE D-1 (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| | 46 | 132 | 65 | 04 | 26 | |
| | 50 | 156 | 65 | 12 | 27 | Job Abolished |
| | 68 | 163 | 69 | 09 | 08 | |
| Tenure Group 1B | 10 | 144 | 57 | 04 | 22 | |
| | 37 | 134 | 61 | 06 | 05 | |
| | 45 | 117 | 64 | 11 | 05 | |
| | 47 | 190 | 65 | 06 | 09 | |
| | 52 | 171 | 66 | 08 | 08 | |
| | 74 | 182 | 70 | 01 | 26 | |
| | 77 | 158 | 70 | 02 | 09 | |
| | 80 | 149 | 70 | 03 | 30 | |
| | 82 | 185 | 70 | 04 | 13 | Job Abolished |
| | 84 | 108 | 70 | 06 | 01 | |
| | 88 | 147 | 70 | 06 | 10 | |
| | 96 | 153 | 70 | 08 | 03 | |
| | 98 | 169 | 70 | 08 | 08 | |
| C.L. 1083 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1B | 6 | 126 | 54 | 09 | 16 | |
| | 18 | 119 | 59 | 05 | 05 | |
| | 99 | 174 | 70 | 09 | 15 | |
| C.L. 1063 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 9 | 164 | 57 | 04 | 08 | Job Abolished |
| | 59 | 160 | 68 | 05 | 08 | |
| Tenure Group 1B | 13 | 159 | 58 | 05 | 26 | Job Abolished |
| | 41 | 109 | 62 | 01 | 02 | Job Abolished |
| | 66 | 114 | 69 | 06 | 09 | |
| | 70 | 189 | 69 | 10 | 31 | |
| C.L. 1103 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 17 | 165 | 59 | 02 | 02 | Job Abolished |
| | 28 | 105 | 60 | 05 | 15 | |
| | 92 | 193 | 70 | 06 | 17 | |
| Tenure Group 1B | 11 | 173 | 57 | 06 | 10 | |
| | 72 | 122 | 69 | 11 | 26 | Job Abolished |
| C.L. 1073 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 22 | 154 | 60 | 01 | 18 | Job Abolished |
| Tenure Group 1B | 12 | 148 | 57 | 08 | 15 | |
| | 44 | 128 | 63 | 02 | 11 | |
| | 49 | 167 | 65 | 11 | 01 | |

TABLE D-1 (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| | 79 | 102 | 70 | 02 | 18 | Job Abolished |
| C.L. 1053 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 19 | 123 | 59 | 06 | 08 | |
| | 27 | 150 | 60 | 03 | 14 | |
| | 36 | 155 | 61 | 06 | 05 | Job Abolished |
| | 53 | 191 | 67 | 01 | 30 | Job Abolished |
| | 63 | 195 | 68 | 10 | 10 | Job Abolished |
| | 69 | 130 | 69 | 09 | 15 | |
| Tenure Group 1B | 38 | 139 | 61 | 08 | 01 | |
| | 60 | 120 | 68 | 05 | 27 | Job Abolished |
| | 61 | 137 | 68 | 06 | 06 | Job Abolished |
| | 65 | 199 | 69 | 02 | 28 | |
| | 71 | 110 | 69 | 11 | 12 | |
| | 75 | 131 | 70 | 02 | 02 | |
| | 76 | 179 | 70 | 02 | 02 | Job Abolished |
| | 78 | 200 | 70 | 02 | 09 | |
| | 85 | 104 | 70 | 06 | 08 | |
| | 87 | 127 | 70 | 06 | 10 | Job Abolished |
| | 90 | 181 | 70 | 06 | 15 | |
| | 95 | 116 | 70 | 08 | 03 | Job Abolished |
| C.L. 1023 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 20 | 140 | 59 | 07 | 06 | |
| Tenure Group 1B | 54 | 141 | 68 | 01 | 29 | |
| C.L. 1033 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 23 | 180 | 60 | 01 | 18 | |
| | 48 | 197 | 65 | 09 | 01 | Job Abolished |
| | 56 | 145 | 68 | 02 | 15 | |
| | 58 | 124 | 68 | 03 | 27 | |
| | 73 | 138 | 70 | 01 | 12 | |
| Tenure Group 1B | 55 | 157 | 68 | 02 | 05 | |
| | 81 | 168 | 70 | 04 | 10 | |
| | 83 | 186 | 70 | 05 | 04 | |
| | 86 | 184 | 70 | 06 | 08 | |
| | 91 | 136 | 70 | 17 | 06 | Job Abolished |
| | 100 | 151 | 71 | 06 | 08 | |

TABLE D-2

COMMUNICATIONS INDUSTRY ENGINEERS
TRANSITION TABLE

| Employee No. | Present Series | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 101 | 109 | | x | | | | | | | x | |
| 102 | 107 | | | | | | | x | | | |
| 103 | 109 | | | | | | | | | x | |
| 104 | 105 | | | | | x | | | | | |
| 105 | 110 | | | | x | | | | | | x |
| 106 | 104 | | | | x | | | | | | |
| 107 | 101 | x | | | | | | | | | |
| 108 | 104 | | | | x | | | | | | x |
| 109 | 106 | | | | | | x | | | | |
| 110 | 105 | | | | | x | | | | | |
| 111 | 109 | | | | | | | | | x | |
| 112 | 109 | | | | | | | | | x | |
| 113 | 109 | | | | | | | | | x | |
| 114 | 106 | | | | | | x | | | | |
| 115 | 104 | | | | x | x | | | | | |
| 116 | 105 | | | | | x | | | | | |
| 117 | 109 | | | | | | | | | x | |
| 118 | 101 | x | | | | | | | | | |
| 119 | 108 | | | | | | | | x | | |
| 120 | 105 | | | | | x | | | | | |
| 121 | 104 | | | | x | | | | | | |
| 122 | 110 | | | | x | | | | | | x |
| 123 | 105 | | | | x | x | | | | | |
| 124 | 103 | | | x | | | | | | | |
| 125 | 101 | x | x | | | | | | | | |
| 126 | 108 | | | | | | | | x | | |
| 127 | 105 | | | | | x | | | x | | |
| 128 | 107 | | | | | | | x | | | |
| 129 | 109 | | | | x | | | | | x | |
| 130 | 105 | | | | | x | | | | | |

TABLE D-2 (Continued)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 131 | 105 | | | | | x | | | | | |
| 132 | 104 | | | | x | | | | | | x |
| 133 | 104 | | | | x | x | | | | | |
| 134 | 104 | | | | x | | | | | | x |
| 135 | 104 | | | | x | | | | | | x |
| 136 | 103 | | | x | | | | | | | |
| 137 | 105 | | | | | x | | | | | |
| 138 | 103 | | | x | | | | | | | |
| 139 | 105 | | | | | x | | | | | x |
| 140 | 102 | | x | | | | | | | | |
| 141 | 102 | | x | | | | | | | | |
| 142 | 109 | | | | | | | | | x | |
| 143 | 104 | | | | x | x | | | | | |
| 144 | 110 | | | | x | | | | | | x |
| 145 | 103 | | | x | | | | | | | |
| 146 | 101 | x | | | | | | | | | |
| 147 | 104 | | | | x | x | | | | | |
| 148 | 107 | | | | | | | x | | | |
| 149 | 104 | | | | x | x | | | | | |
| 150 | 105 | | | | x | x | | | | | |
| 151 | 103 | | | x | | | | | | | |
| 152 | 104 | | | | x | | | | | | |
| 153 | 104 | | | | x | | | | x | | |
| 154 | 107 | | | | | | | x | | | |
| 155 | 105 | | | | | x | | | | | |
| 156 | 104 | | | | x | | | | x | | |
| 157 | 103 | | | x | | | | | | | |
| 158 | 104 | | | | x | | | | x | | |
| 159 | 106 | | | | | | x | | | | |
| 160 | 106 | | | | | | x | | | | |
| 161 | 109 | | | | | | | | | x | |
| 162 | 109 | | | | | | | | | x | |
| 163 | 104 | | | | x | | | | | | |
| 164 | 106 | | | | | | x | | | | |
| 165 | 110 | | | | x | | | | | | x |
| 166 | 109 | | | | | | | | | x | |
| 167 | 107 | | | | | | | x | | | |
| 168 | 103 | | | x | | | | | | | |
| 169 | 104 | | | | x | | | | | | x |
| 170 | 104 | | | | x | x | | | | | |

TABLE D-2 (Continued)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 171 | 104 | | | | x | | | | | | x |
| 172 | 104 | | | | x | | | | x | | |
| 173 | 110 | | | | x | | | | | | x |
| 174 | 108 | | | | | | | | x | | |
| 175 | 104 | | | | x | | | | | | |
| 176 | 104 | | | | x | | | | x | | |
| 177 | 109 | | | | | | | | | x | |
| 178 | 101 | x | | | | | | | x | | |
| 179 | 105 | | | | x | x | | | | | |
| 180 | 103 | | | x | | | | | | | |
| 181 | 105 | | | | | x | | | | | |
| 182 | 104 | | | | x | | | | | | |
| 183 | 104 | | | | x | | | | x | | |
| 184 | 103 | | | x | | | | | | | |
| 185 | 104 | x | | | x | | | | | | |
| 186 | 103 | x | | x | | | | | | | |
| 187 | 101 | x | | | | | | | | | |
| 188 | 101 | x | | | x | | | | | | |
| 189 | 106 | | | | | | x | | | | |
| 190 | 104 | | | | x | | | | x | | |
| 191 | 105 | | | | | x | | | | | |
| 192 | 109 | | | | | | | | | x | |
| 193 | 110 | | | | x | | | | | | x |
| 194 | 109 | | | | | | | | | x | |
| 195 | 105 | | | | | x | | | | | |
| 196 | 101 | x | | | | | | | | | |
| 197 | 103 | | | x | | | | | | | |
| 198 | 109 | | | | | | | | | x | |
| 199 | 105 | | | | | x | | | | | |
| 200 | 105 | | | | | x | | | | | |

TABLE D-3

COMMOG DATA SAMPLE WITH GOVTG CRITERIA--WORK SHEET

| Employee | Grade | Comp. L. | Old Job No. | Action | New C.L. | New Job No. | Remarks |
|---|---|---|---|---|---|---|---|
| 113 | 13 | 1093 | 8 | Reas.Lat. | 1093 | 94 | Bump 192 |
| 164 | 13 | 1063 | 9 | Reas.Lat. | 1063 | 70 | Bump 189 |
| 170 | 13 | 1043 | 15 | Reas.Lat. | 1043 | 98 | Bump 169 |
| 161 | 13 | 1093 | 16 | Reas.Lat. | 1093 | 24 | Bump 162 |
| 165 | 13 | 1103 | 17 | Reas.Lat. | 1103 | 11 | Bump 173 |
| 154 | 13 | 1073 | 22 | Reas.Lat. | 1073 | 49 | Bump 167 |
| 135 | 13 | 1043 | 34 | Reas.Lat. | 1043 | 96 | Bump 153 |
| 155 | 13 | 1053 | 36 | Reas.Lat. | 1053 | 90 | Bump 181 |
| 197 | 13 | 1033 | 48 | Reas.Lat. | 1033 | 100 | Bump 151 |
| 156 | 13 | 1043 | 50 | Reas.Lat. | 1043 | 88 | Bump 147 |
| 191 | 13 | 1053 | 53 | Reas.Lat. | 1053 | 85 | Bump 104 |
| 195 | 13 | 1053 | 63 | Reas.Lat. | 1053 | 78 | Bump 200 |
| 173 | 13 | 1103 | 11 | Tran.Lat. | 1043 | 84 | Bump 108 |
| 159 | 13 | 1063 | 13 | Reas.Lat. | 1063 | 66 | Bump 114 |
| 162 | 13 | 1093 | 24 | Layoff | - | - | - |
| 109 | 13 | 1063 | 41 | Layoff | - | - | - |
| 167 | 13 | 1073 | 49 | Layoff | - | - | - |
| 120 | 13 | 1053 | 60 | Reas.Lat. | 1053 | 75 | Bump 131 |
| 137 | 13 | 1053 | 61 | Reas.Lat. | 1053 | 71 | Bump 110 |
| 114 | 13 | 1063 | 66 | Layoff | - | - | - |
| 189 | 13 | 1063 | 70 | Layoff | - | - | - |
| 110 | 13 | 1053 | 71 | Layoff | - | - | - |
| 122 | 13 | 1103 | 72 | Tran.Lat. | 1043 | 80 | Bump 145 |
| 131 | 13 | 1053 | 75 | Layoff | - | - | - |
| 179 | 13 | 1053 | 76 | Tran.Lat. | 1043 | 77 | Bump 158 |
| 158 | 13 | 1043 | 77 | Layoff | - | - | - |
| 200 | 13 | 1053 | 78 | Layoff | - | - | - |
| 102 | 13 | 1073 | 79 | Layoff | - | - | - |
| 149 | 13 | 1043 | 80 | Layoff | - | - | - |
| 185 | 13 | 1043 | 82 | Tran.Lat. | 1013 | 93 | Bump 178 |

TABLE D-3 (Continued)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 108 | 13 | 1043 | 84 | Layoff | - | - | - |
| 104 | 13 | 1053 | 85 | Layoff | - | - | - |
| 127 | 13 | 1053 | 87 | Tran.Lat. | 1083 | 99 | Bump 174 |
| 147 | 13 | 1043 | 88 | Layoff | - | - | - |
| 177 | 13 | 1093 | 89 | Layoff | - | - | - |
| 181 | 13 | 1053 | 90 | Layoff | - | - | - |
| 136 | 13 | 1033 | 91 | Layoff | - | - | - |
| 178 | 13 | 1013 | 93 | Layoff | - | - | - |
| 192 | 13 | 1093 | 94 | Layoff | - | - | - |
| 116 | 13 | 1053 | 95 | Layoff | - | - | - |
| 153 | 13 | 1043 | 96 | Layoff | - | - | - |
| 188 | 13 | 1013 | 97 | Layoff | - | - | - |
| 169 | 13 | 1043 | 98 | Layoff | - | - | - |
| 174 | 13 | 1083 | 99 | Layoff | - | - | - |
| 151 | 13 | 1033 | 100 | Layoff | - | - | - |

TABLE D-4

NEW RETENTION REGISTER (COMMUNICATIONS INDUSTRY SAMPLE)

| | Job No. | Employee | Service Comp. Date Yr. | Mo. | Day |
|---|---|---|---|---|---|
| C.L. 1093 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 1 | 112 | 45 | 11 | 10 |
| | 2 | 129 | 46 | 10 | 22 |
| | 94 | 113 | 56 | 06 | 18 |
| | 14 | 100 | 58 | 06 | 02 |
| | 24 | 161 | 58 | 10 | 21 |
| | 25 | 117 | 60 | 02 | 01 |
| | 33 | 142 | 60 | 10 | 03 |
| | 39 | 103 | 61 | 09 | 15 |
| | 57 | 198 | 68 | 02 | 17 |
| | 62 | 166 | 68 | 06 | 24 |
| | 64 | 194 | 68 | 10 | 25 |
| C.L. 1013 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 3 | 107 | 50 | 12 | 06 |
| | 29 | 146 | 60 | 06 | 13 |
| | 35 | 125 | 61 | 01 | 04 |
| | 40 | 187 | 61 | 12 | 04 |
| | 51 | 118 | 66 | 04 | 11 |
| Tenure Group 1B | 67 | 196 | 69 | 06 | 30 |
| | 93 | 185 | 70 | 04 | 13 |
| C.L. 1043 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 4 | 152 | 51 | 02 | 01 |
| | 5 | 121 | 53 | 06 | 15 |
| | 7 | 175 | 56 | 06 | 21 |
| | 98 | 170 | 58 | 08 | 14 |
| | 21 | 106 | 59 | 08 | 10 |
| | 26 | 172 | 60 | 02 | 29 |
| | 30 | 115 | 60 | 08 | 03 |
| | 31 | 183 | 60 | 09 | 01 |
| | 32 | 143 | 60 | 09 | 26 |

TABLE D-4 (Continued)

| | | | | | |
|---|---|---|---|---|---|
| | 96 | 135 | 60 | 10 | 27 |
| | 42 | 133 | 62 | 01 | 31 |
| | 43 | 176 | 62 | 09 | 04 |
| | 46 | 132 | 65 | 04 | 26 |
| | 88 | 156 | 65 | 12 | 27 |
| | 68 | 163 | 69 | 09 | 08 |
| Tenure Group 1B | 10 | 144 | 57 | 04 | 22 |
| | 84 | 173 | 57 | 06 | 10 |
| | 37 | 134 | 61 | 06 | 05 |
| | 45 | 117 | 64 | 11 | 05 |
| | 47 | 190 | 65 | 06 | 09 |
| | 52 | 171 | 66 | 08 | 08 |
| | 80 | 122 | 69 | 11 | 26 |
| | 74 | 182 | 70 | 01 | 26 |
| | 77 | 179 | 70 | 02 | 02 |
| C.L. 1083 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1B | 6 | 126 | 54 | 09 | 16 |
| | 18 | 119 | 59 | 05 | 05 |
| | 99 | 127 | 70 | 06 | 10 |
| C.L. 1063 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 70 | 164 | 57 | 04 | 08 |
| | 59 | 160 | 68 | 05 | 08 |
| Tenure Group 1B | 66 | 159 | 58 | 05 | 26 |
| C.L. 1103 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 11 | 165 | 59 | 02 | 02 |
| | 28 | 105 | 60 | 05 | 15 |
| | 92 | 193 | 70 | 06 | 17 |
| C.L. 1073 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 49 | 154 | 60 | 01 | 18 |
| Tenure Group 1B | 12 | 148 | 57 | 08 | 15 |
| | 44 | 128 | 65 | 11 | 01 |
| C.L. 1053 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 19 | 123 | 59 | 06 | 08 |
| | 27 | 150 | 60 | 03 | 14 |
| | 90 | 155 | 61 | 06 | 05 |

TABLE D-4 (Continued)

| | | | | | |
|---|---|---|---|---|---|
| | 85 | 191 | 67 | 01 | 30 |
| | 78 | 195 | 68 | 10 | 10 |
| | 69 | 130 | 69 | 09 | 15 |
| Tenure Group 1B | 38 | 139 | 61 | 08 | 01 |
| | 75 | 120 | 68 | 05 | 27 |
| | 71 | 137 | 68 | 06 | 06 |
| | 65 | 199 | 69 | 02 | 28 |
| C.L. 1023 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 20 | 140 | 59 | 07 | 06 |
| Tenure Group 1B | 54 | 141 | 68 | 01 | 29 |
| C.L. 1033 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 23 | 180 | 60 | 01 | 18 |
| | 100 | 197 | 65 | 09 | 01 |
| | 56 | 145 | 69 | 02 | 15 |
| | 58 | 124 | 68 | 03 | 27 |
| | 73 | 138 | 70 | 01 | 12 |
| Tenure Group 1B | 55 | 157 | 68 | 02 | 05 |
| | 81 | 168 | 70 | 04 | 10 |
| | 83 | 186 | 70 | 05 | 04 |
| | 86 | 184 | 70 | 06 | 08 |

TABLE D-5

COMMOG RIF WITH GOVTG RETENTION
CRITERIA--SUMMARY ACTIONS

LAYOFFS

| Old Job No. | Employee No. | Competitive Level | Age | Service Comp. Date Yr. | Mo. | Day | Rank Performance |
|---|---|---|---|---|---|---|---|
| 24 | 162 | 1093 | 41 | 60 | 01 | 25 | 74 |
| 41 | 109 | 1063 | 39 | 62 | 01 | 02 | 48 |
| 49 | 167 | 1073 | 38 | 65 | 11 | 01 | 65 |
| 66 | 114 | 1063 | 29 | 69 | 06 | 09 | 19 |
| 70 | 189 | 1063 | 34 | 69 | 10 | 31 | 39 |
| 71 | 110 | 1053 | 29 | 69 | 11 | 12 | 46 |
| 75 | 131 | 1053 | 28 | 70 | 02 | 02 | 77 |
| 77 | 158 | 1043 | 28 | 70 | 02 | 09 | 11 |
| 78 | 200 | 1053 | 30 | 70 | 02 | 09 | 83 |
| 79 | 102 | 1073 | 28 | 70 | 02 | 18 | 40 |
| 80 | 149 | 1043 | 32 | 70 | 03 | 30 | 60 |
| 84 | 108 | 1043 | 28 | 70 | 06 | 01 | 50 |
| 85 | 104 | 1053 | 38 | 70 | 06 | 08 | 89 |
| 88 | 147 | 1043 | 30 | 70 | 06 | 10 | 28 |
| 89 | 177 | 1093 | 32 | 70 | 06 | 11 | 32 |
| 90 | 181 | 1053 | 33 | 70 | 06 | 15 | 56 |
| 91 | 136 | 1033 | 28 | 70 | 06 | 17 | 64 |
| 93 | 178 | 1013 | 31 | 70 | 06 | 22 | 71 |
| 94 | 192 | 1093 | 51 | 70 | 07 | 27 | 47 |
| 95 | 116 | 1053 | 40 | 70 | 08 | 03 | 86 |
| 96 | 153 | 1043 | 29 | 70 | 08 | 03 | 34 |
| 97 | 188 | 1013 | 38 | 70 | 08 | 03 | 44 |
| 98 | 169 | 1043 | 54 | 70 | 08 | 08 | 31 |
| 99 | 174 | 1083 | 50 | 70 | 09 | 15 | 67 |
| 100 | 151 | 1033 | 43 | 71 | 06 | 08 | 58 |

Note: All 25 layoffs were GS-13 equivalents, and non veterans.

Other personnel actions:
15 reassignment lateral moves
5 transition lateral moves

Total adverse actions: 45

TABLE D-6

RETENTION REGISTER (AEROSPACE INDUSTRY SAMPLE)

| | Job No. | Employee | Service Comp. Date: Yr | Mo | Day | Action |
|---|---|---|---|---|---|---|
| C.L. Configuration Management GS-15 | | | | | | |
| Tenure Group 1A | 26 | 269 | 52 | 08 | 06 | |
| | 43 | 202 | 56 | 05 | 28 | |
| | 46 | 238 | 56 | 08 | 30 | |
| | 54 | 279 | 58 | 06 | 25 | |
| | 58 | 225 | 58 | 10 | 20 | |
| | 59 | 243 | 58 | 12 | 08 | |
| | 64 | 245 | 59 | 06 | 22 | |
| Tenure Group 1B | 65 | 250 | 59 | 07 | 06 | |
| C.L. Configuration Management GS-14 | | | | | | |
| Tenure Group 1A | 15 | 281 | 50 | 10 | 30 | Job Abolished |
| | 17 | 234 | 51 | 04 | 05 | Job Abolished |
| | 21 | 204 | 51 | 08 | 14 | |
| | 30 | 270 | 53 | 06 | 10 | |
| | 34 | 217 | 54 | 01 | 25 | Job Abolished |
| | 45 | 229 | 56 | 08 | 20 | |
| | 53 | 264 | 58 | 06 | 13 | Job Abolished |
| | 73 | 240 | 62 | 03 | 07 | |
| | 80 | 252 | 65 | 01 | 22 | Job Abolished |
| | 100 | 260 | 75 | 01 | 13 | |
| Tenure Group 1B | 16 | 278 | 51 | 01 | 15 | Job Abolished |
| | 27 | 275 | 52 | 10 | 02 | |
| | 60 | 272 | 59 | 02 | 28 | Job Abolished |
| | 66 | 233 | 59 | 10 | 11 | |
| | 72 | 262 | 61 | 07 | 03 | Job Abolished |
| | 84 | 203 | 66 | 07 | 27 | |
| | 85 | 289 | 67 | 02 | 25 | |
| C.L. Configuration Management GS-13 | | | | | | |
| Tenure Group 1A | 4 | 201 | 44 | 10 | 03 | |
| | 6 | 213 | 46 | 03 | 04 | |
| | 7 | 263 | 47 | 01 | 02 | |

TABLE D-6 (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| | 8 | 211 | 47 | 08 | 25 | Job Abolished |
| | 10 | 230 | 48 | 07 | 23 | |
| | 12 | 290 | 49 | 02 | 02 | |
| | 14 | 222 | 49 | 09 | 09 | |
| | 18 | 255 | 51 | 06 | 12 | |
| | 22 | 271 | 51 | 11 | 23 | Job Abolished |
| | 25 | 285 | 52 | 07 | 13 | |
| | 28 | 257 | 52 | 11 | 20 | |
| | 31 | 224 | 53 | 07 | 08 | |
| | 32 | 251 | 53 | 08 | 12 | |
| | 33 | 276 | 53 | 08 | 12 | |
| | 35 | 207 | 54 | 03 | 25 | |
| | 37 | 219 | 54 | 11 | 25 | |
| | 39 | 232 | 55 | 07 | 25 | |
| | 41 | 288 | 55 | 12 | 25 | Job Abolished |
| | 42 | 265 | 56 | 05 | 03 | |
| | 44 | 242 | 56 | 06 | 12 | |
| | 48 | 282 | 57 | 02 | 19 | Job Abolished |
| | 50 | 296 | 57 | 06 | 10 | Job Abolished |
| | 51 | 254 | 57 | 08 | 17 | |
| | 63 | 267 | 59 | 06 | 10 | Job Abolished |
| | 67 | 293 | 60 | 03 | 07 | |
| | 68 | 209 | 60 | 03 | 28 | |
| | 69 | 218 | 60 | 07 | 11 | |
| | 75 | 268 | 62 | 04 | 24 | |
| | 77 | 283 | 62 | 11 | 12 | |
| | 82 | 273 | 66 | 02 | 15 | |
| | 83 | 228 | 66 | 02 | 28 | |
| | 89 | 297 | 68 | 11 | 21 | Job Abolished |
| | 92 | 299 | 70 | 12 | 01 | |
| Tenure Group 1B | 2 | 258 | 39 | 12 | 16 | |
| | 3 | 286 | 42 | 10 | 04 | |
| | 5 | 223 | 45 | 10 | 19 | |
| | 13 | 221 | 49 | 08 | 18 | Job Abolished |
| | 24 | 215 | 52 | 03 | 10 | |
| | 36 | 216 | 54 | 10 | 22 | Job Abolished |
| | 38 | 248 | 55 | 05 | 02 | |
| | 40 | 287 | 55 | 09 | 06 | |
| | 47 | 295 | 57 | 01 | 21 | |
| | 55 | 291 | 58 | 08 | 04 | |
| | 56 | 249 | 58 | 09 | 11 | |
| | 57 | 237 | 58 | 09 | 30 | |
| | 62 | 266 | 59 | 04 | 28 | |
| | 70 | 231 | 61 | 02 | 20 | |
| | 81 | 261 | 66 | 02 | 05 | |

TABLE D-6 (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| C.L. Configuration Management GS-12 | | | | | | |
| Tenure Group 1A | 9 | 246 | 48 | 05 | 26 | Job Abolished |
| | 11 | 206 | 48 | 09 | 03 | |
| | 19 | 244 | 51 | 06 | 15 | |
| | 20 | 241 | 51 | 07 | 30 | |
| | 23 | 210 | 51 | 11 | 28 | |
| | 29 | 239 | 53 | 03 | 27 | |
| | 49 | 220 | 57 | 02 | 28 | |
| | 52 | 256 | 58 | 01 | 11 | |
| | 61 | 298 | 59 | 04 | 08 | Job Abolished |
| | 71 | 247 | 61 | 04 | 27 | |
| | 74 | 300 | 62 | 03 | 19 | |
| | 76 | 235 | 62 | 10 | 04 | Job Abolished |
| | 79 | 277 | 64 | 08 | 20 | Job Abolished |
| | 90 | 236 | 69 | 01 | 12 | |
| | 96 | 274 | 73 | 01 | 23 | |
| Tenure Group 1B | 1 | 214 | 36 | 09 | 27 | |
| | 78 | 294 | 63 | 08 | 02 | |
| | 86 | 212 | 67 | 04 | 29 | |
| | 87 | 292 | 67 | 09 | 27 | Job Abolished |
| | 88 | 227 | 68 | 01 | 05 | |
| | 94 | 280 | 72 | 10 | 17 | |
| C.L. Configuration Management GS-10 | | | | | | |
| Tenure Group 1A | 93 | 205 | 72 | 07 | 05 | |
| | 95 | 253 | 72 | 11 | 16 | Job Abolished |
| Tenure Group 1B | 91 | 226 | 69 | 12 | 06 | Job Abolished |
| | 97 | 284 | 73 | 06 | 07 | Job Abolished |
| | 98 | 259 | 73 | 07 | 05 | |
| C.L. Configuration Management GS-07 | | | | | | |
| Tenure Group 1B | 99 | 208 | 74 | 07 | 15 | |

TABLE D-7

AEROG DATA SAMPLE WITH GOVTG CRITERIA--WORK SHEET

| Employ-ee | Grade | Old Job No. | Action | New Grade | New Job No. | Remarks |
|---|---|---|---|---|---|---|
| 281 | 14 | 15 | Reas.Lat. | 14 | 85 | Bump 289 |
| 234 | 14 | 17 | Reas.Lat. | 14 | 84 | Bump 203 |
| 217 | 14 | 34 | Reas.Lat. | 14 | 66 | Bump 233 |
| 264 | 14 | 53 | Reas.Lat. | 14 | 27 | Bump 275 |
| 252 | 14 | 80 | Reas.Lat. | 14 | 100 | Bump 260 |
| 260 | 14 | 100 | Bump Retr. | 13 | 81 | Bump 261 |
| 278 | 14 | 16 | Bump Retr. | 13 | 70 | Bump 231 |
| 275 | 14 | 27 | Bump Retr. | 13 | 62 | Bump 266 |
| 272 | 14 | 60 | Bump Retr. | 13 | 57 | Bump 237 |
| 233 | 14 | 66 | Bump Retr. | 13 | 56 | Bump 249 |
| 262 | 14 | 72 | Bump Retr. | 13 | 55 | Bump 291 |
| 203 | 14 | 84 | Bump Retr. | 13 | 47 | Bump 295 |
| 289 | 14 | 85 | Bump Retr. | 13 | 40 | Bump 287 |
| 211 | 13 | 8 | Reas.Lat. | 13 | 38 | Bump 248 |
| 271 | 13 | 22 | Reas.Lat. | 13 | 24 | Bump 215 |
| 288 | 13 | 41 | Reas.Lat. | 13 | 5 | Bump 223 |
| 282 | 13 | 48 | Reas.Lat. | 13 | 3 | Bump 286 |
| 296 | 13 | 50 | Reas.Lat. | 13 | 2 | Bump 258 |
| 267 | 13 | 63 | Reas.Lat. | 13 | 92 | Bump 299 |
| 297 | 13 | 89 | Bump Retr. | 12 | 94 | Bump 280 |
| 299 | 13 | 92 | Bump Retr. | 12 | 88 | Bump 227 |
| 258 | 13 | 2 | Bump Retr. | 12 | 86 | Bump 212 |
| 286 | 13 | 3 | Bump Retr. | 12 | 78 | Bump 294 |
| 223 | 13 | 5 | Bump Retr. | 12 | 1 | Bump 214 |
| 221 | 13 | 13 | Bump Retr. | 12 | 96 | Bump 274 |
| 215 | 13 | 24 | Bump Retr. | 12 | 90 | Bump 236 |
| 216 | 13 | 36 | Bump Retr. | 12 | 74 | Bump 300 |
| 248 | 13 | 38 | Bump Retr. | 12 | 71 | Bump 247 |
| 287 | 13 | 40 | Bump Retr. | 12 | 52 | Bump 256 |
| 295 | 13 | 47 | Bump Retr. | 12 | 49 | Bump 220 |

TABLE D-7 (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| 291 | 13 | 55 | Bump Retr. | 12 | 29 | Bump 239 |
| 249 | 13 | 56 | Bump Retr. | 12 | 23 | Bump 210 |
| 237 | 13 | 57 | Bump Retr. | 12 | 20 | Bump 241 |
| 266 | 13 | 62 | Bump Retr. | 12 | 19 | Bump 244 |
| 231 | 13 | 70 | Bump Retr. | 12 | 11 | Bump 206 |
| 261 | 13 | 81 | Bump Retr. | 10 | 98 | Bump 259 |
| 246 | 12 | 9 | Bump Retr. | 10 | 93 | Bump 205 |
| 206 | 12 | 11 | Bump Retr. | 7 | 99 | Bump 208 |
| 244 | 12 | 19 | Layoff | - | - | - |
| 241 | 12 | 20 | Layoff | - | - | - |
| 210 | 12 | 23 | Layoff | - | - | - |
| 239 | 12 | 29 | Layoff | - | - | - |
| 220 | 12 | 49 | Layoff | - | - | - |
| 256 | 12 | 52 | Layoff | - | - | - |
| 298 | 12 | 61 | Layoff | - | - | - |
| 247 | 12 | 71 | Layoff | - | - | - |
| 300 | 12 | 74 | Layoff | - | - | - |
| 235 | 12 | 76 | Layoff | - | - | - |
| 277 | 12 | 79 | Layoff | - | - | - |
| 236 | 12 | 90 | Layoff | - | - | - |
| 274 | 12 | 96 | Layoff | - | - | - |
| 214 | 12 | 1 | Layoff | - | - | - |
| 294 | 12 | 78 | Layoff | - | - | - |
| 212 | 12 | 86 | Layoff | - | - | - |
| 292 | 12 | 87 | Layoff | - | - | - |
| 227 | 12 | 88 | Layoff | - | - | - |
| 280 | 12 | 94 | Layoff | - | - | - |
| 205 | 10 | 93 | Layoff | - | - | - |
| 253 | 10 | 95 | Layoff | - | - | - |
| 226 | 10 | 91 | Layoff | - | - | - |
| 284 | 10 | 97 | Layoff | - | - | - |
| 259 | 10 | 98 | Layoff | - | - | - |
| 208 | 7 | 99 | Layoff | - | - | - |

TABLE D-8

NEW RETENTION REGISTER
(AEROSPACE INDUSTRY SAMPLE)

| | Job No. | Employee | Service Comp. Date Yr. | Mo. | Day |
|---|---|---|---|---|---|
| C.L. Configuration Management GS-15 | | | | | |
| Tenure Group 1A | 26 | 269 | 52 | 08 | 06 |
| | 43 | 202 | 56 | 05 | 28 |
| | 46 | 238 | 56 | 08 | 30 |
| | 54 | 279 | 58 | 06 | 25 |
| | 58 | 225 | 58 | 10 | 20 |
| | 59 | 243 | 58 | 12 | 08 |
| | 64 | 245 | 59 | 06 | 22 |
| Tenure Group 1B | 65 | 250 | 59 | 07 | 06 |
| C.L. Configuration Management GS-14 | | | | | |
| Tenure Group 1A | 85 | 281 | 50 | 10 | 30 |
| | 84 | 234 | 51 | 04 | 05 |
| | 21 | 204 | 51 | 08 | 14 |
| | 30 | 270 | 53 | 06 | 10 |
| | 66 | 217 | 54 | 01 | 25 |
| | 45 | 229 | 56 | 08 | 20 |
| | 27 | 264 | 58 | 06 | 13 |
| | 73 | 240 | 62 | 03 | 07 |
| | 100 | 252 | 65 | 01 | 22 |
| C.L. Configuration Management GS-13 | | | | | |
| Tenure Group 1A | 4 | 201 | 44 | 10 | 03 |
| | 6 | 213 | 46 | 03 | 04 |
| | 7 | 263 | 47 | 01 | 02 |
| | 38 | 211 | 47 | 08 | 25 |
| | 10 | 230 | 48 | 07 | 23 |

TABLE D-8 (Continued)

| | | | | | |
|---|---|---|---|---|---|
| | 12 | 290 | 49 | 02 | 02 |
| | 14 | 222 | 49 | 09 | 09 |
| | 18 | 255 | 51 | 06 | 12 |
| | 24 | 271 | 51 | 11 | 23 |
| | 25 | 285 | 52 | 07 | 13 |
| | 28 | 257 | 52 | 11 | 20 |
| | 31 | 224 | 53 | 07 | 08 |
| | 32 | 251 | 53 | 08 | 12 |
| | 33 | 276 | 53 | 09 | 11 |
| | 35 | 207 | 54 | 03 | 25 |
| | 37 | 219 | 54 | 11 | 25 |
| | 39 | 232 | 55 | 07 | 25 |
| | 5 | 288 | 55 | 12 | 25 |
| | 42 | 265 | 56 | 05 | 03 |
| | 44 | 242 | 56 | 06 | 12 |
| | 3 | 282 | 57 | 02 | 19 |
| | 2 | 296 | 57 | 06 | 10 |
| | 51 | 254 | 57 | 08 | 17 |
| | 92 | 267 | 59 | 06 | 10 |
| | 67 | 293 | 60 | 03 | 07 |
| | 68 | 209 | 60 | 03 | 28 |
| | 69 | 218 | 60 | 07 | 11 |
| | 75 | 268 | 62 | 04 | 24 |
| | 77 | 283 | 62 | 11 | 12 |
| | 82 | 273 | 66 | 02 | 15 |
| | 83 | 228 | 66 | 02 | 28 |
| | 81 | 260 | 75 | 01 | 13 |
| Tenure Group 1B | 70 | 278 | 51 | 01 | 15 |
| | 62 | 275 | 52 | 10 | 02 |
| | 57 | 272 | 59 | 02 | 28 |
| | 56 | 233 | 59 | 10 | 11 |
| | 55 | 262 | 61 | 07 | 03 |
| | 47 | 203 | 66 | 07 | 27 |
| | 40 | 289 | 67 | 02 | 25 |
| C.L. Configuration Management GS-12 | | | | | |
| Tenure Group 1A | 94 | 297 | 68 | 11 | 21 |
| | 88 | 299 | 70 | 12 | 01 |
| Tenure Group 1B | 86 | 258 | 39 | 12 | 16 |
| | 78 | 286 | 42 | 10 | 04 |
| | 1 | 223 | 45 | 10 | 19 |
| | 96 | 221 | 49 | 08 | 18 |

TABLE D-8 (Continued)

| | | | | | |
|---|---|---|---|---|---|
| | 90 | 215 | 52 | 03 | 10 |
| | 74 | 216 | 54 | 10 | 22 |
| | 71 | 248 | 55 | 05 | 02 |
| | 52 | 287 | 55 | 09 | 06 |
| | 49 | 295 | 57 | 01 | 21 |
| | 29 | 291 | 58 | 08 | 04 |
| | 23 | 249 | 58 | 09 | 11 |
| | 20 | 237 | 58 | 09 | 30 |
| | 19 | 266 | 59 | 04 | 28 |
| | 11 | 231 | 61 | 02 | 20 |
| C.L. Configuration Management GS-10 | | | | | |
| Tenure Group 1A | 93 | 246 | 48 | 05 | 26 |
| Tenure Group 1B | 98 | 261 | 66 | 02 | 05 |
| C.L. Configuration Management GS-07 | | | | | |
| Tenure Group 1A | 99 | 206 | 48 | 09 | 03 |

TABLE D-9

AEROG RIF WITH GOVTG RETENTION CRITERIA--
SUMMARY ACTIONS

LAYOFFS

| Old Job No. | Employee Number | Competitive Level | Age | Service Comp. Date:Yr,Mo,Day | | | Performance Rank |
|---|---|---|---|---|---|---|---|
| 19 | 244 | 12 | 51 | 51 | 06 | 15 | 71 |
| 20 | 241 | 12 | 50 | 51 | 07 | 30 | 79 |
| 23 | 210 | 12 | 50 | 51 | 11 | 28 | 90 |
| 29 | 239 | 12 | 54 | 53 | 03 | 27 | 99 |
| 49 | 220 | 12 | 48 | 57 | 02 | 28 | 66 |
| 52 | 256 | 12 | 40 | 58 | 01 | 11 | 78 |
| 61 | 298 | 12 | 44 | 59 | 04 | 08 | 88 |
| 71 | 247 | 12 | 42 | 61 | 04 | 27 | 82 |
| 74 | 300 | 12 | 54 | 62 | 03 | 19 | 59 |
| 76 | 235 | 12 | 40 | 62 | 10 | 04 | 84 |
| 79 | 277 | 12 | 40 | 64 | 08 | 20 | 80 |
| 90 | 236 | 12 | 56 | 69 | 01 | 12 | 53 |
| 96 | 274 | 12 | 44 | 73 | 01 | 23 | 83 |
| 1 | 214 | 12 | 61 | 36 | 09 | 27 | 85 |
| 78 | 294 | 12 | 56 | 63 | 08 | 02 | 81 |
| 86 | 212 | 12 | 54 | 67 | 04 | 29 | 92 |
| 87 | 292 | 12 | 34 | 67 | 09 | 27 | 58 |
| 88 | 227 | 12 | 30 | 68 | 01 | 05 | 34 |
| 94 | 280 | 12 | 31 | 72 | 01 | 07 | 70 |
| 93 | 205 | 10 | 35 | 72 | 07 | 05 | 91 |
| 95 | 253 | 10 | 29 | 72 | 11 | 16 | 86 |
| 91 | 226 | 10 | 29 | 69 | 12 | 06 | 94 |
| 97 | 284 | 10 | 25 | 73 | 06 | 07 | 97 |
| 98 | 259 | 10 | 24 | 73 | 07 | 05 | 95 |
| 99 | 208 | 7 | 23 | 74 | 07 | 15 | 100 |

Note: Fifteen veterans and 10 non-veterans were laid off.

Other personnel actions:
11 reassignment lateral moves
24 one-grade bumps
2 two-grade bumps
1 three-grade bump

Total adverse actions: 63

TABLE D-10

GOVERNMENT AGENCY ENGINEERING SAMPLE
USED FOR REDUCTION IN FORCE

| Job No. | Employee No. | Service Comp. Date: Yr, | Mo, | Day | Age | Salary or GS-Level[1] | Education Major | Higher Degree | Yr. | Veteran Status[2] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.[3] | 394 | 41 | 11 | 16 | 59 | 15 | MULT. | BS | 40 | N |
| 2. | 346 | 42 | 05 | 29 | 59 | 14 | - | HSD | 43 | N |
| 3. | 343 | 42 | 11 | 13 | 56 | 14 | E.E. | BS | 57 | V |
| 4. | 330 | 43 | 07 | 04 | 54 | 13 | A&S | BS | 42 | V |
| 5. | 347 | 44 | 05 | 19 | 59 | 14 | M.E. | BS | 50 | V |
| 6. | 323 | 44 | 06 | 14 | 65 | 13 | M.E. | BS | 46 | N |
| 7. | 353 | 44 | 11 | 26 | 53 | 14 | MATH | BS | 49 | V |
| 8. | 318 | 45 | 03 | 17 | 60 | 13 | E.E. | BS | 48 | V |
| 9. | 398 | 46 | 04 | 11 | 56 | 15 | M.E. | BS | 49 | V |
| 10. | 320 | 46 | 10 | 20 | 63 | 13 | C.E. | BS | 34 | V |
| 11. | 321 | 46 | 10 | 26 | 62 | 13 | I.E. | BS | 48 | N |
| 12. | 387 | 47 | 07 | 27 | 59 | 14 | MULT. | BS | 51 | V |
| 13. | 393 | 47 | 12 | 20 | 56 | 15 | E.E. | BS | 49 | V |
| 14. | 359 | 48 | 02 | 23 | 52 | 14 | I.E. | BS | 50 | V |
| 15. | 370 | 48 | 04 | 29 | 51 | 14 | - | HSD | 34 | V |
| 16. | 349 | 48 | 06 | 25 | 52 | 14 | MET.E. | BS | 47 | V |
| 17. | 396 | 48 | 08 | 10 | 48 | 15 | E.E. | BS | 68 | N |
| 18. | 388 | 48 | 10 | 20 | 53 | 14 | E.E. | BS | 50 | V |
| 19. | 364 | 48 | 10 | 28 | 52 | 14 | M.E. | BS | 49 | V |
| 20. | 325 | 48 | 12 | 15 | 51 | 13 | M.E. | BS | 50 | V |
| 21. | 348 | 48 | 12 | 26 | 58 | 14 | M.E. | BS | 49 | V |
| 22. | 313 | 49 | 05 | 19 | 49 | 13 | CV.E. | BS | 50 | V |
| 23. | 390 | 49 | 11 | 05 | 47 | 15 | E.E. | BS | 48 | N |
| 24. | 363 | 49 | 12 | 08 | 51 | 14 | ST.E. | BS | 49 | V |
| 25. | 315 | 50 | 07 | 07 | 55 | 13 | - | HSD | 38 | V |
| 26. | 368 | 50 | 07 | 27 | 54 | 14 | E.E. | BS | 54 | V |
| 27. | 310 | 50 | 10 | 06 | 53 | 13 | E.E. | BS | 50 | N |
| 28. | 362 | 50 | 10 | 11 | 45 | 14 | E.E. | BS | 58 | N |
| 29. | 392 | 51 | 03 | 16 | 47 | 15 | CV.E. | BS | 50 | N |
| 30. | 308 | 51 | 05 | 15 | 50 | 13 | E.E. | BS | 50 | V |

TABLE D-10 (Continued)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 31. | 377 | 51 | 05 | 15 | 49 | 14 | M.E. | BS | 51 | V |
| 32. | 397 | 51 | 09 | 10 | 55 | 15 | E.E. | BS | 50 | V |
| 33. | 351 | 51 | 09 | 29 | 53 | 14 | E.E. | BS | 50 | V |
| 34. | 304 | 52 | 01 | 04 | 61 | 12 | E.E. | BS | 37 | N |
| 35. | 350 | 52 | 03 | 10 | 40 | 14 | PHYS. | BS | 63 | V |
| 36. | 375 | 52 | 07 | 15 | 47 | 14 | E.E. | BS | 51 | N |
| 37. | 374 | 53 | 05 | 06 | 44 | 14 | E.E. | BS | 60 | V |
| 38. | 324 | 53 | 06 | 04 | 49 | 13 | CV.E. | BS | 55 | V |
| 39. | 334 | 53 | 08 | 14 | 46 | 13 | E.E. | BS | 59 | V |
| 40. | 352 | 53 | 09 | 28 | 44 | 14 | M.E. | BS | 54 | V |
| 41. | 339 | 53 | 10 | 05 | 48 | 13 | A&S | BS | 58 | V |
| 42. | 344 | 54 | 01 | 10 | 63 | 14 | - | HSD | 29 | N |
| 43. | 386 | 54 | 01 | 15 | 47 | 14 | I.E. | BS | 50 | V |
| 44. | 311 | 54 | 03 | 25 | 46 | 13 | E.E. | BS | 60 | V |
| 45. | 316 | 54 | 11 | 27 | 43 | 13 | I.E. | BS | 59 | V |
| 46. | 372 | 55 | 02 | 04 | 49 | 14 | MULT. | BS | 50 | V |
| 47. | 382 | 55 | 03 | 29 | 50 | 14 | M.E. | BS | 56 | V |
| 48. | 314 | 55 | 04 | 11 | 45 | 13 | I.E. | BS | 58 | V |
| 49. | 361 | 55 | 08 | 22 | 44 | 14 | M.E. | BS | 58 | V |
| 50. | 335 | 55 | 11 | 04 | 47 | 13 | E.E. | BS | 56 | V |
| 51. | 356 | 55 | 12 | 05 | 49 | 14 | M.E. | BS | 50 | V |
| 51. | 360 | 56 | 03 | 04 | 45 | 14 | MULT. | BS | 62 | V |
| 53. | 355 | 56 | 03 | 15 | 46 | 14 | E.E. | BS | 52 | V |
| 54. | 385 | 56 | 04 | 13 | 42 | 14 | CV.E. | BS | 55 | V |
| 55. | 305 | 56 | 08 | 09 | 43 | 13 | ST.E. | BS | 55 | V |
| 56. | 329 | 56 | 08 | 14 | 39 | 13 | E.E. | BS | 64 | V |
| 57. | 342 | 56 | 10 | 04 | 52 | 14 | E.E. | BS | 57 | V |
| 58. | 341 | 56 | 12 | 26 | 57 | 14 | PHYS. | BS | 47 | V |
| 59. | 317 | 57 | 02 | 19 | 56 | 13 | M.E. | BS | 50 | V |
| 60. | 301 | 57 | 07 | 16 | 42 | 12 | E.E. | BS | 61 | V |
| 61. | 332 | 57 | 08 | 06 | 61 | 13 | C.E. | BS | 41 | N |
| 62. | 400 | 57 | 08 | 14 | 43 | 15 | MULT. | BS | 60 | V |
| 63. | 345 | 57 | 10 | 09 | 42 | 14 | M.E. | BS | 56 | V |
| 64. | 331 | 57 | 10 | 27 | 47 | 13 | I.E. | BS | 58 | V |
| 65. | 381 | 57 | 11 | 16 | 51 | 14 | MULT. | BS | 51 | V |

TABLE D-10 (Continued)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 66. | 383 | 57 | 11 | 18 | 40 | 14 | E.E. | BS | 60 | V |
| 67. | 357 | 57 | 11 | 20 | 57 | 14 | E.E. | BS | 52 | V |
| 68. | 326 | 58 | 03 | 21 | 46 | 13 | B.A. | PHD | 71 | V |
| 69. | 354 | 58 | 03 | 30 | 40 | 14 | E.E. | BS | 61 | V |
| 70. | 312 | 58 | 10 | 28 | 45 | 13 | M.E. | BS | 59 | V |
| 71. | 337 | 59 | 03 | 06 | 45 | 13 | M.E. | BS | 57 | V |
| 72. | 378 | 59 | 05 | 01 | 37 | 14 | MULT. | BS | 71 | V |
| 73. | 369 | 59 | 06 | 14 | 39 | 14 | E.E. | BS | 61 | V |
| 74. | 389 | 59 | 08 | 27 | 40 | 15 | C.E. | BS | 58 | V |
| 75. | 333 | 59 | 09 | 19 | 39 | 13 | M.E. | BS | 58 | N |
| 76. | 336 | 60 | 01 | 14 | 39 | 13 | E.E. | BS | 60 | N |
| 77. | 371 | 60 | 03 | 21 | 45 | 14 | E.E. | BS | 52 | V |
| 78. | 365 | 60 | 05 | 27 | 42 | 14 | MATH | BS | 59 | V |
| 79. | 395 | 60 | 06 | 26 | 44 | 15 | E.E. | BS | 58 | V |
| 80. | 366 | 60 | 07 | 16 | 38 | 14 | E.E. | BS | 59 | N |
| 81. | 327 | 60 | 12 | 17 | 50 | 13 | E.E. | BS | 50 | V |
| 82. | 322 | 61 | 02 | 20 | 38 | 13 | PHYS. | BS | 59 | V |
| 83. | 358 | 61 | 05 | 14 | 49 | 14 | MULT. | BS | 60 | N |
| 84. | 376 | 61 | 07 | 21 | 37 | 14 | E.E. | BS | 60 | N |
| 85. | 338 | 61 | 08 | 09 | 43 | 13 | I.E. | BS | 59 | V |
| 86. | 379 | 61 | 12 | 05 | 44 | 14 | E.E. | BS | 58 | V |
| 87. | 391 | 62 | 05 | 22 | 41 | 15 | E.E. | BS | 60 | V |
| 88. | 303 | 62 | 07 | 06 | 37 | 12 | I.E. | BS | 61 | V |
| 89. | 340 | 62 | 10 | 02 | 40 | 14 | I.E. | BS | 58 | N |
| 90. | 307 | 63 | 04 | 04 | 48 | 13 | MULT. | BS | 51 | V |
| 91. | 380 | 63 | 06 | 09 | 37 | 14 | E.E. | BS | 60 | N |
| 92. | 319 | 63 | 07 | 19 | 37 | 13 | E.E. | BS | 62 | N |
| 93. | 367 | 65 | 07 | 17 | 33 | 14 | MULT. | BS | 64 | N |
| 94. | 306 | 65 | 11 | 20 | 40 | 13 | M.E. | BS | 58 | N |
| 95. | 309 | 66 | 06 | 25 | 33 | 13 | I.E. | BS | 64 | V |

TABLE D-10 (Continued)

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 96. | 328 | 67 | 02 | 03 | 50 | 13 | A.E. | BS | 60 | N |
| 97. | 302 | 67 | 09 | 26 | 45 | 12 | MULT. | BS | 60 | V |
| 98. | 373 | 68 | 08 | 21 | 36 | 14 | MULT. | BS | 64 | V |
| 99. | 384 | 69 | 07 | 10 | 42 | 14 | MULT. | BS | 71 | V |
| 100. | 399 | 71 | 06 | 18 | 40 | 15 | E.E. | PHD | 65 | N |

[1]Per annum salary not shown.

[2]Veteran status: N is a non-veteran, V is a veteran.

[3]Job numbers were assigned in sequence by seniority.

Abbreviations used in this table include:

| | | | |
|---|---|---|---|
| HSD | High School Diploma | A.E. | Aeronautical Engineer |
| E.E. | Electrical Engineer | M.E. | Mechanical Engineer |
| A&S | Arts & Sciences | C.E. | Chemical Engineer |
| MULT. | Multiple Degree | I.E. | Industrial Engineer |
| MET.E. | Metallurgical Engineer | CV.E. | Civil Engineer |
| ST.E. | Structural Engineer | PHYS. | Physics |

TABLE D-11

RETENTION REGISTER (GOVERNMENT AGENCY SAMPLE)

| | Job No. | Employee | Service Comp. Date: Yr | Mo | Day | Action |
|---|---|---|---|---|---|---|
| C.L. 8011 | | | | | | |
| GS-15 | | | | | | |
| Tenure Group 1A | 9 | 398 | 46 | 04 | 11 | Job Abolished |
| | 12 | 387 | 47 | 07 | 27 | |
| | 13 | 393 | 47 | 12 | 20 | Job Abolished |
| | 32 | 397 | 51 | 09 | 10 | |
| | 74 | 389 | 59 | 08 | 27 | |
| | 79 | 395 | 60 | 06 | 26 | Job Abolished |
| | 87 | 391 | 62 | 05 | 22 | Job Abolished |
| Tenure Group 1B | 17 | 396 | 48 | 08 | 10 | Job Abolished |
| | 23 | 390 | 49 | 11 | 05 | |
| | 29 | 392 | 51 | 03 | 16 | |
| C.L. 8551 | | | | | | |
| GS-15 | | | | | | |
| Tenure Group 1A | 18 | 388 | 48 | 10 | 20 | |
| | 1 | 394 | 41 | 11 | 16 | |
| | 100 | 399 | 71 | 06 | 18 | |
| C.L. 8961 | | | | | | |
| GS-15 | | | | | | |
| Tenure Group 1A | 43 | 396 | 54 | 01 | 15 | |
| C.L. 8401 | | | | | | |
| GS-15 | | | | | | |
| Tenure Group 1A | 62 | 400 | 57 | 08 | 14 | |
| C.L. 8012 | | | | | | |
| GS-14 | | | | | | |
| Tenure Group 1A | 3 | 343 | 42 | 11 | 13 | |
| | 5 | 347 | 44 | 05 | 19 | |
| | 16 | 349 | 48 | 06 | 25 | Job Abolished |
| | 19 | 364 | 48 | 10 | 28 | |
| | 21 | 348 | 48 | 12 | 26 | |
| | 24 | 363 | 49 | 12 | 08 | |
| | 26 | 368 | 50 | 07 | 27 | |
| | 31 | 377 | 51 | 05 | 15 | |
| | 33 | 351 | 51 | 09 | 29 | |
| | 35 | 350 | 52 | 03 | 10 | |
| | 40 | 352 | 53 | 09 | 28 | |
| | 47 | 382 | 55 | 03 | 29 | |

TABLE D-11 (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| | 49 | 361 | 55 | 08 | 22 | |
| | 51 | 356 | 55 | 12 | 05 | |
| | 52 | 360 | 56 | 03 | 15 | |
| | 54 | 385 | 56 | 04 | 13 | |
| | 63 | 345 | 57 | 10 | 09 | Job Abolished |
| | 65 | 381 | 57 | 11 | 16 | |
| | 66 | 383 | 57 | 11 | 18 | |
| | 67 | 357 | 57 | 11 | 20 | |
| | 72 | 378 | 59 | 05 | 01 | Job Abolished |
| | 73 | 369 | 59 | 06 | 14 | |
| | 78 | 365 | 60 | 05 | 27 | |
| Tenure Group 1B | 2 | 346 | 42 | 05 | 29 | |
| | 28 | 362 | 50 | 10 | 11 | |
| | 42 | 344 | 54 | 01 | 10 | |
| | 80 | 366 | 60 | 07 | 16 | |
| | 83 | 358 | 61 | 05 | 14 | |
| | 93 | 367 | 65 | 07 | 17 | |
| C.L. 8552 | | | | | | |
| GS-14 | | | | | | |
| Tenure Group 1A | 7 | 353 | 44 | 11 | 26 | |
| | 15 | 370 | 48 | 04 | 29 | Job Abolished |
| | 37 | 374 | 53 | 05 | 06 | |
| | 46 | 372 | 55 | 02 | 04 | |
| | 53 | 355 | 56 | 03 | 15 | Job Abolished |
| | 69 | 354 | 58 | 08 | 30 | |
| | 77 | 371 | 60 | 03 | 21 | |
| | 86 | 379 | 61 | 12 | 05 | |
| | 98 | 373 | 68 | 08 | 21 | |
| | 99 | 384 | 69 | 07 | 10 | |
| Tenure Group 1B | 36 | 375 | 52 | 07 | 15 | Job Abolished |
| | 84 | 376 | 61 | 07 | 21 | |
| | 91 | 380 | 63 | 06 | 09 | Job Abolished |
| C.L. 8962 | | | | | | |
| GS-14 | | | | | | |
| Tenure Group 1A | 14 | 359 | 48 | 04 | 29 | |
| | 57 | 342 | 56 | 10 | 04 | |
| Tenure Group 1B | 89 | 340 | 62 | 10 | 02 | Job Abolished |
| C.L. 8612 | | | | | | |
| GS-14 | | | | | | |
| Tenure Group 1A | 58 | 341 | 56 | 12 | 26 | |

TABLE D-11 (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| C.L. 8013 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 4 | 330 | 43 | 07 | 04 | |
| | 10 | 320 | 46 | 10 | 20 | |
| | 20 | 325 | 48 | 12 | 15 | |
| | 22 | 313 | 49 | 05 | 19 | Job Abolished |
| | 25 | 315 | 50 | 07 | 07 | |
| | 38 | 324 | 53 | 06 | 04 | |
| | 41 | 339 | 53 | 10 | 05 | Job Abolished |
| | 45 | 316 | 54 | 11 | 27 | |
| | 48 | 314 | 55 | 04 | 11 | Job Abolished |
| | 55 | 305 | 56 | 08 | 09 | |
| | 56 | 329 | 56 | 08 | 14 | |
| | 59 | 317 | 57 | 02 | 19 | |
| | 64 | 331 | 57 | 10 | 27 | |
| | 70 | 312 | 58 | 10 | 28 | |
| | 71 | 337 | 59 | 03 | 06 | |
| Tenure Group 1B | 11 | 321 | 46 | 10 | 26 | |
| | 61 | 332 | 57 | 08 | 06 | Job Abolished |
| | 75 | 333 | 59 | 09 | 19 | |
| C.L. 8553 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 8 | 318 | 45 | 08 | 17 | Job Abolished |
| | 39 | 334 | 53 | 08 | 14 | |
| | 44 | 311 | 54 | 03 | 25 | |
| | 50 | 335 | 56 | 11 | 04 | Job Abolished |
| | 68 | 326 | 58 | 03 | 21 | |
| | 81 | 321 | 60 | 12 | 17 | |
| | 82 | 322 | 61 | 02 | 20 | Job Abolished |
| Tenure Group 1B | 27 | 310 | 50 | 10 | 06 | |
| | 76 | 336 | 60 | 01 | 14 | Job Abolished |
| | 92 | 319 | 63 | 07 | 19 | |
| | 96 | 328 | 67 | 02 | 03 | |
| C.L. 8963 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 30 | 308 | 51 | 05 | 15 | |
| | 85 | 338 | 61 | 08 | 09 | |
| | 95 | 309 | 66 | 06 | 25 | Job Abolished |
| C.L. 8613 | | | | | | |
| GS-13 | | | | | | |
| Tenure Group 1A | 90 | 307 | 63 | 04 | 04 | |

TABLE D-11 (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| C.L. 8503<br>GS-13<br>Tenure Group 1B | 6 | 323 | 44 | 06 | 14 | |
| C.L. 8303<br>GS-13<br>Tenure Group 1B | 94 | 306 | 65 | 11 | 20 | |
| C.L. 8014<br>GS-12<br>Tenure Group 1B | 34 | 304 | 52 | 01 | 04 | Job Abolished |
| C.L. 8554<br>GS-12<br>Tenure Group 1A | 60 | 301 | 57 | 07 | 16 | Job Abolished |
| C.L. 8964<br>GS-12<br>Tenure Group 1A | 88 | 303 | 62 | 07 | 06 | |
| C.L. 8614<br>GS-12<br>Tenure Group 1A | 97 | 302 | 67 | 09 | 20 | Job Abolished |

TABLE D-12

GOVERNMENT AGENCY ENGINEERS
TRANSITION TABLE

| Employ-ee No. | Pres-ent Series | 801 | 855 | 896 | 861 | 850 | 840 | 830 |
|---|---|---|---|---|---|---|---|---|
| 301 | 855 | | x | | | | | |
| 302 | 861 | x | | | x | | | |
| 303 | 896 | x | | x | | | | |
| 304 | 801 | x | x | | | | | |
| 305 | 801 | x | | | x | | | x |
| 306 | 830 | | | | | | | x |
| 307 | 861 | | | | x | | x | x |
| 308 | 896 | x | x | x | | | | |
| 309 | 896 | | | x | | | | |
| 310 | 855 | x | x | | | | | |
| 311 | 855 | | x | | | | | |
| 312 | 801 | x | | | | | | x |
| 313 | 801 | x | | | | | | |
| 314 | 801 | x | | x | | | | |
| 315 | 801 | x | | | | | | |
| 316 | 801 | x | | x | | | | |
| 317 | 801 | x | | | | | | x |
| 318 | 855 | | x | | | | | |
| 319 | 855 | | x | | | | | |
| 320 | 801 | x | | | | | | |
| 321 | 801 | x | | x | | | | |
| 322 | 855 | x | x | | | | | |
| 323 | 850 | x | | | | x | | x |
| 324 | 801 | x | | | | | | |
| 325 | 801 | x | | | | | | x |
| 326 | 855 | x | x | | | | | |
| 327 | 855 | | x | | | | | |
| 328 | 855 | | x | | x | | | |
| 329 | 801 | x | x | | | | | |
| 330 | 801 | x | | | | | | |

TABLE D-12 (Continued)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 331 | 801 | x | | x | | | | |
| 332 | 801 | x | | | | | | |
| 333 | 801 | x | | | | | | x |
| 334 | 855 | x | x | | | | | |
| 335 | 855 | x | x | | | | | |
| 336 | 855 | | x | | | | | |
| 337 | 801 | x | | | | | | x |
| 338 | 896 | | | x | | | | |
| 339 | 801 | x | | | | | | x |
| 340 | 896 | | | x | | | | |
| 341 | 861 | x | | | x | | | |
| 342 | 896 | | x | x | | | | |
| 343 | 801 | x | x | | | | | |
| 344 | 801 | x | | | | | | |
| 345 | 801 | x | | | | | | x |
| 346 | 801 | x | | | | | | |
| 347 | 801 | x | | | | | | x |
| 348 | 801 | x | | | | | | x |
| 349 | 801 | x | | | | | x | |
| 350 | 801 | x | | | | | | |
| 351 | 801 | x | x | | | | | |
| 352 | 801 | x | | | | | | x |
| 353 | 855 | | x | | | | | |
| 354 | 855 | | x | | | | | |
| 355 | 855 | | x | | | | | |
| 356 | 801 | x | | | | | | x |
| 357 | 801 | x | x | | | | | |
| 358 | 801 | x | x | | | | | |
| 359 | 896 | | | x | | | | |
| 360 | 801 | x | | | | | | |
| 361 | 801 | x | | | | | | x |
| 362 | 801 | x | x | | | | | |
| 363 | 801 | x | | | x | | | |
| 364 | 801 | x | | | | | | x |
| 365 | 801 | x | | | | | | |
| 366 | 801 | x | x | | | | | |
| 367 | 801 | x | x | | | x | | |
| 368 | 801 | x | x | | | | | |
| 369 | 801 | x | x | | | | | |
| 370 | 855 | | x | | | | | |

TABLE D-12 (Continued)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 371 | 855 | | x | | | | | |
| 372 | 855 | x | x | | | | | |
| 373 | 855 | | x | | | | | |
| 374 | 855 | | x | | | | | |
| 375 | 855 | | x | | | | | |
| 376 | 855 | | x | | | | | |
| 377 | 801 | x | | | | | | x |
| 378 | 801 | x | | x | | | | |
| 379 | 855 | | x | | | | | |
| 380 | 855 | | x | | | | | |
| 381 | 855 | | x | | | | | |
| 382 | 801 | x | | | | | | x |
| 383 | 801 | x | x | | | | | |
| 384 | 855 | | x | | | | | |
| 385 | 801 | x | | | | | | |
| 386 | 896 | | | x | | | | |
| 387 | 801 | x | | | | | | |
| 388 | 855 | | x | | | | | |
| 389 | 801 | x | | | | | | |
| 390 | 801 | x | x | | | | | |
| 391 | 801 | x | x | | | | | |
| 392 | 801 | x | | | | | | |
| 393 | 801 | x | x | | | | | |
| 394 | 855 | | x | | | | | x |
| 395 | 801 | x | x | | | | | |
| 396 | 801 | x | x | | | | | |
| 397 | 801 | x | x | | | | | |
| 398 | 801 | x | | | | | | x |
| 399 | 855 | | x | | | | | |
| 400 | 840 | | | | | | x | x |

TABLE D-13

GOVTG DATA SAMPLE WITH GOVTG CRITERIA--WORK SHEET

| Employ-ee | Grade | Comp. L. | Old Job No. | Action | Grade | New C.L. | New Job No. | Remarks |
|---|---|---|---|---|---|---|---|---|
| 398 | 15 | 8011 | 9 | Reas.Lat. | 15 | 8011 | 29 | Bump 392 |
| 393 | 15 | 8011 | 13 | Reas.Lat. | 15 | 8011 | 23 | Bump 390 |
| 395 | 15 | 8011 | 78 | Tran.Lat. | 15 | 8551 | 100 | Bump 399 |
| 391 | 15 | 8011 | 87 | Tran.Lat. | 15 | 8551 | 1 | Bump 394 |
| 394 | 15 | 8551 | 1 | Bump Retr. | 14 | 8552 | 84 | Bump 376 |
| 396 | 15 | 8011 | 17 | Bump Retr. | 14 | 8012 | 93 | Bump 367 |
| 390 | 15 | 8011 | 23 | Bump Retr. | 14 | 8012 | 83 | Bump 358 |
| 392 | 15 | 8011 | 29 | Bump Retr. | 14 | 8012 | 80 | Bump 366 |
| 399 | 15 | 8551 | 100 | Layoff | - | - | - | - |
| 370 | 14 | 8552 | 15 | Reas.Lat. | 14 | 8552 | 99 | Bump 384 |
| 349 | 14 | 8012 | 16 | Reas.Lat. | 14 | 8012 | 42 | Bump 344 |
| 355 | 14 | 8552 | 53 | Reas.Lat. | 14 | 8552 | 53 | Bump 373 |
| 345 | 14 | 8012 | 63 | Reas.Lat. | 14 | 8012 | 28 | Bump 362 |
| 378 | 14 | 8012 | 72 | Reas.Lat. | 14 | 8012 | 2 | Bump 346 |
| 373 | 14 | 8552 | 98 | Bump Retr. | 13 | 8553 | 96 | Bump 328 |
| 384 | 14 | 8552 | 99 | Bump Retr. | 13 | 8553 | 92 | Bump 319 |
| 346 | 14 | 8012 | 2 | Bump Retr. | 13 | 8013 | 75 | Bump 333 |
| 362 | 14 | 8012 | 28 | Bump Retr. | 13 | 8013 | 11 | Bump 321 |
| 375 | 14 | 8552 | 36 | Bump Retr. | 13 | 8553 | 27 | Bump 310 |
| 344 | 14 | 8012 | 42 | Layoff | - | - | - | - |
| 366 | 14 | 8012 | 80 | Bump Retr. | 13 | 8013 | 71 | Bump 337 |
| 358 | 14 | 8012 | 83 | Bump Retr. | 13 | 8013 | 70 | Bump 312 |
| 376 | 14 | 8552 | 84 | Bump Retr. | 13 | 8553 | 81 | Bump 327 |
| 340 | 14 | 8962 | 89 | Bump Retr. | 13 | 8963 | 85 | Bump 338 |
| 380 | 14 | 8552 | 91 | Bump Retr. | 13 | 8553 | 68 | Bump 326 |
| 367 | 14 | 8012 | 93 | Bump Retr. | 13 | 8013 | 64 | Bump 331 |
| 318 | 13 | 8553 | 8 | Reas.Lat. | 13 | 8553 | 44 | Bump 311 |
| 313 | 13 | 8013 | 22 | Reas.Lat. | 13 | 8013 | 59 | Bump 317 |
| 339 | 13 | 8013 | 41 | Reas.Lat. | 13 | 8013 | 56 | Bump 329 |
| 311 | 13 | 8553 | 44 | Layoff | - | - | - | - |

TABLE D-13 (Continued)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 314 | 13 | 8013 | 48 | Reas.Lat. | 13 | 8013 | 55 | Bump 305 |
| 335 | 13 | 8553 | 50 | Reas.Lat. | 13 | 8553 | 96 | Bump 373 |
| 305 | 13 | 8013 | 55 | Tran.Lat. | 13 | 8613 | 90 | Bump 307 |
| 329 | 13 | 8013 | 56 | Tran.Lat. | 13 | 8553 | 92 | Bump 384 |
| 317 | 13 | 8013 | 59 | Tran.Lat. | 13 | 8303 | 94 | Bump 306 |
| 331 | 13 | 8013 | 64 | Tran.Lat. | 13 | 8963 | 85 | Bump 340 |
| 326 | 13 | 8553 | 68 | Tran.Lat. | 13 | 8013 | 64 | Bump 367 |
| 312 | 13 | 8013 | 70 | Reas.Lat. | 13 | 8013 | 71 | Bump 366 |
| 337 | 13 | 8013 | 71 | Layoff | - | - | - | - |
| 327 | 13 | 8553 | 81 | Layoff | - | - | - | - |
| 322 | 13 | 8553 | 82 | Layoff | - | - | - | - |
| 338 | 13 | 8963 | 85 | Bump Retr. | 12 | 8964 | 88 | Bump 303 |
| 307 | 13 | 8613 | 90 | Layoff | - | - | - | - |
| 309 | 13 | 8963 | 95 | Layoff | - | - | - | - |
| 373 | 13 | 8553 | 96 | Layoff | - | - | - | - |
| 384 | 13 | 8553 | 92 | Layoff | - | - | - | - |
| 321 | 13 | 8013 | 11 | Tran.Ret. | 12 | 8964 | 30 | Bump 308 |
| 310 | 13 | 8553 | 27 | Layoff | - | - | - | - |
| 332 | 13 | 8013 | 61 | Layoff | - | - | - | - |
| 333 | 13 | 8013 | 75 | Layoff | - | - | - | - |
| 336 | 13 | 8553 | 76 | Layoff | - | - | - | - |
| 366 | 13 | 8013 | 80 | Layoff | - | - | - | - |
| 340 | 13 | 8963 | 89 | Layoff | - | - | - | - |
| 319 | 13 | 8553 | 92 | Layoff | - | - | - | - |
| 367 | 13 | 8013 | 93 | Layoff | - | - | - | - |
| 306 | 13 | 8303 | 94 | Layoff | - | - | - | - |
| 328 | 13 | 8553 | 96 | Layoff | - | - | - | - |
| 308 | 12 | 8963 | 30 | Layoff | - | - | - | - |
| 301 | 12 | 8554 | 60 | Layoff | - | - | - | - |
| 303 | 12 | 8964 | 88 | Layoff | - | - | - | - |
| 302 | 12 | 8614 | 97 | Layoff | - | - | - | - |
| 304 | 12 | 8014 | 34 | Layoff | - | - | - | - |

TABLE D-14

NEW RETENTION REGISTER (GOVERNMENT AGENCY DATA SAMPLE)

| | Job No. | Employee | Service Comp. Date Yr. | Mo. | Day |
|---|---|---|---|---|---|
| C.L. 8011 | | | | | |
| GS-15 | | | | | |
| Tenure Group 1A | 29 | 398 | 46 | 04 | 11 |
| | 12 | 387 | 47 | 07 | 27 |
| | 23 | 393 | 47 | 12 | 20 |
| | 32 | 397 | 51 | 09 | 10 |
| | 74 | 389 | 59 | 08 | 27 |
| C.L. 8551 | | | | | |
| GS-15 | | | | | |
| Tenure Group 1A | 18 | 388 | 48 | 10 | 20 |
| | 100 | 395 | 60 | 06 | 26 |
| | 1 | 391 | 62 | 05 | 22 |
| C.L. 8961 | | | | | |
| GS-15 | | | | | |
| Tenure Group 1A | 43 | 386 | 54 | 01 | 15 |
| C.L. 8401 | | | | | |
| GS-15 | | | | | |
| Tenure Group 1A | 62 | 400 | 57 | 08 | 14 |
| C.L. 8012 | | | | | |
| GS-14 | | | | | |
| Tenure Group 1A | 3 | 343 | 42 | 11 | 13 |
| | 5 | 347 | 44 | 05 | 19 |
| | 42 | 349 | 48 | 06 | 25 |
| | 93 | 396 | 48 | 08 | 10 |
| | 19 | 364 | 48 | 10 | 28 |
| | 21 | 348 | 48 | 12 | 26 |
| | 83 | 390 | 49 | 11 | 05 |
| | 24 | 363 | 49 | 12 | 08 |
| | 26 | 368 | 50 | 07 | 27 |
| | 80 | 392 | 51 | 03 | 16 |
| | 31 | 377 | 51 | 05 | 15 |
| | 33 | 351 | 51 | 09 | 29 |

TABLE D-14 (Continued)

| | | | | | |
|---|---|---|---|---|---|
| | 35 | 350 | 52 | 03 | 10 |
| | 40 | 352 | 53 | 09 | 28 |
| | 47 | 382 | 55 | 03 | 29 |
| | 49 | 361 | 55 | 08 | 22 |
| | 51 | 356 | 55 | 12 | 05 |
| | 52 | 360 | 56 | 03 | 15 |
| | 54 | 385 | 56 | 04 | 13 |
| | 28 | 345 | 57 | 10 | 09 |
| | 65 | 381 | 57 | 11 | 16 |
| | 66 | 383 | 57 | 11 | 18 |
| | 67 | 357 | 57 | 11 | 20 |
| | 2 | 378 | 59 | 05 | 01 |
| | 73 | 369 | 59 | 06 | 14 |
| | 78 | 365 | 60 | 05 | 27 |
| C.L. 8552 | | | | | |
| GS-14 | | | | | |
| Tenure Group 1A | 84 | 394 | 41 | 11 | 16 |
| | 7 | 353 | 44 | 11 | 26 |
| | 99 | 370 | 48 | 04 | 29 |
| | 37 | 374 | 53 | 05 | 06 |
| | 46 | 372 | 55 | 02 | 04 |
| | 98 | 355 | 56 | 03 | 15 |
| | 69 | 354 | 58 | 08 | 30 |
| | 77 | 371 | 60 | 03 | 21 |
| | 86 | 379 | 61 | 12 | 05 |
| C.L. 8962 | | | | | |
| GS-14 | | | | | |
| Tenure Group 1A | 14 | 359 | 48 | 04 | 29 |
| | 57 | 342 | 56 | 10 | 04 |
| C.L. 8612 | | | | | |
| GS-14 | | | | | |
| Tenure Group 1A | 58 | 341 | 56 | 12 | 26 |
| C.L. 8013 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 4 | 330 | 43 | 07 | 04 |
| | 10 | 320 | 46 | 10 | 20 |
| | 20 | 325 | 48 | 10 | 20 |
| | 59 | 313 | 49 | 05 | 19 |
| | 25 | 315 | 50 | 07 | 07 |
| | 38 | 324 | 53 | 06 | 04 |
| | 56 | 339 | 53 | 10 | 05 |

TABLE D-14 (Continued)

| | | | | | |
|---|---|---|---|---|---|
| | 45 | 316 | 54 | 11 | 27 |
| | 55 | 314 | 55 | 04 | 11 |
| | 64 | 313 | 58 | 03 | 21 |
| | 71 | 320 | 58 | 10 | 28 |
| | 70 | 325 | 61 | 05 | 14 |
| Tenure Group 1B | 75 | 346 | 42 | 05 | 29 |
| | 11 | 362 | 50 | 10 | 11 |
| C.L. 8553 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 44 | 318 | 45 | 03 | 17 |
| | 39 | 334 | 53 | 08 | 14 |
| | 96 | 335 | 55 | 08 | 22 |
| | 92 | 329 | 56 | 08 | 14 |
| Tenure Group 1B | 27 | 375 | 52 | 07 | 15 |
| | 81 | 376 | 61 | 07 | 21 |
| | 68 | 380 | 63 | 06 | 09 |
| C.L. 8963 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 30 | 308 | 51 | 05 | 15 |
| | 85 | 331 | 57 | 10 | 27 |
| C.L. 8613 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1A | 90 | 305 | 56 | 08 | 09 |
| C.L. 8503 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1B | 6 | 323 | 44 | 06 | 14 |
| C.L. 8303 | | | | | |
| GS-13 | | | | | |
| Tenure Group 1B | 94 | 317 | 57 | 02 | 19 |
| C.L. 8964 | | | | | |
| GS-12 | | | | | |
| Tenure Group 1A | 88 | 338 | 61 | 08 | 09 |

TABLE D-15

GOVTG RIF WITH GOVTG RETENTION CRITERIA--
SUMMARY ACTIONS

| Old Job No. | Employee Number | Competitive Level | Layoffs Age | Service Comp. Date:Yr | Mo | Day | Grade |
|---|---|---|---|---|---|---|---|
| 100 | 399 | 8551 | 40 | 71 | 06 | 18 | 15 |
| 42 | 344 | 8012 | 63 | 54 | 01 | 10 | 14 |
| 44 | 311 | 8553 | 46 | 54 | 03 | 25 | 13 |
| 71 | 337 | 8013 | 45 | 59 | 03 | 06 | 13 |
| 81 | 327 | 8553 | 50 | 60 | 12 | 17 | 13 |
| 82 | 322 | 8553 | 38 | 61 | 02 | 20 | 13 |
| 90 | 307 | 8613 | 48 | 63 | 04 | 04 | 13 |
| 95 | 309 | 8963 | 33 | 66 | 06 | 25 | 13 |
| 98 | 373 | 8552 | 36 | 68 | 08 | 21 | 14 |
| 99 | 384 | 8552 | 42 | 69 | 07 | 10 | 14 |
| 27 | 310 | 8553 | 53 | 50 | 10 | 06 | 13 |
| 61 | 332 | 8013 | 61 | 57 | 08 | 06 | 13 |
| 75 | 333 | 8013 | 39 | 59 | 09 | 19 | 13 |
| 76 | 336 | 8553 | 39 | 60 | 01 | 14 | 13 |
| 80 | 366 | 8012 | 38 | 60 | 07 | 16 | 14 |
| 89 | 340 | 8962 | 40 | 62 | 10 | 02 | 14 |
| 92 | 319 | 8553 | 37 | 63 | 07 | 19 | 13 |
| 93 | 367 | 8012 | 33 | 65 | 07 | 17 | 14 |
| 94 | 306 | 8303 | 40 | 65 | 11 | 20 | 13 |
| 96 | 328 | 8553 | 50 | 67 | 02 | 03 | 13 |
| 30 | 308 | 8963 | 50 | 51 | 05 | 15 | 13 |
| 60 | 301 | 8554 | 42 | 57 | 07 | 16 | 12 |
| 88 | 303 | 8964 | 37 | 62 | 07 | 06 | 12 |
| 97 | 302 | 8614 | 45 | 67 | 09 | 20 | 12 |
| 34 | 304 | 8014 | 61 | 52 | 01 | 04 | 12 |

Note: There were 12 veterans and 13 non-veterans, distributed by grade as 1, 6, 14 and 4 for GS-15, -14, -13 and -12.

Other personnel actions:
13 reassignment lateral moves
7 transition lateral moves
16 bump retreat moves
1 transition retreat

Total adverse actions: 62

# APPENDIX E

## COMMOG PHASE TWO

Table E-1. Communications Industry Engineering Sample Used for the Questionnaire

Contents

Summarization of Management Perceptions Obtained on Field Trip

TABLE E-1

COMMUNICATIONS INDUSTRY ENGINEERING SAMPLE FOR THE QUESTIONNAIRE

| Approx. Seniority[1] | Employee No. | Age Range[2] | Vet. Status[3] | Education | | | Some Grad. |
|---|---|---|---|---|---|---|---|
| | | | | Major[4] | Highest Degree | Year | |
| 1. | 012 | 50-55 | V | I.E. | BS | 43 | |
| 2. | 013 | 50-55 | V | E.E. | BS | 50 | |
| 3. | 020 | 45-50 | V | S.E. | BS | 50 | |
| 4. | 011 | 45-50 | V | E.E. | BS | 53 | |
| 5. | 032 | 45-50 | N | - | HSD | 48 | |
| 6. | 022 | 40-45 | N | A&S | B | 56 | x |
| 7. | 025 | 40-45 | V | MATH | BS | 57 | |
| 8. | 005 | 40-45 | V | - | HSD | 53 | |
| 9. | 033 | 45-50 | V | M.E. | BS | 59 | |
| 10. | 038 | 40-45 | V | E.E. | BS | 59 | |
| 11. | 019 | 40-45 | V | MATH | MS | 60 | |
| 12. | 027 | 40-45 | V | MULT. | BS | 59 | |
| 13. | 026 | 35-40 | N | M.E. | MS | 67 | |
| 14. | 035 | 35-40 | N | M.E. | BS | 60 | |
| 15. | 030 | 35-40 | V | - | HSD | 56 | |
| 16. | 016 | 40-45 | V | A&S | B | 58 | x |
| 17. | 010 | 45-50 | V | M.E. | MS | 74 | |
| 18. | 039 | 40-45 | V | M.E. | BS | 61 | |
| 19. | 003 | 35-40 | N | M.E. | BS | 61 | |
| 20. | 006 | 40-45 | V | - | HSD | 48 | |
| 21. | 004 | 35-40 | V | - | HSD | 51 | |
| 22. | 007 | 35-40 | N | A&S | MS | 76 | |
| 23. | 002 | 40-45 | V | - | HSD | 52 | |
| 24. | 021 | 35-40 | V | - | HSD | 54 | |
| 25. | 029 | 25-30 | N | E.E. | MS | 76 | |
| 26. | 028 | 40-45 | N | MET.E. | MS | 66 | |
| 27. | 009 | 30-35 | N | M.E. | MS | 72 | |
| 28. | 014 | 40-45 | V | MET.E. | MS | 71 | |
| 29. | 024 | 25-30 | V | PHY. | BS | 65 | |
| 30. | 001 | 35-40 | V | E.E. | MS | 72 | |

TABLE E-1 (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| 31. | 034 | 35-40 | V | E.E. | MS | 72 |
| 32. | 037 | 30-35 | N | E.E. | MS | 71 |
| 33. | 023 | 25-30 | V | M.E. | BS | 69 |
| 34. | 017 | 25-30 | N | I.E. | MS | 75 |
| 35. | 018 | 30-35 | V | I.E. | MS | 71 |
| 36. | 040 | 25-30 | V | A&S | MS | 70 |
| 37. | 008 | 25-30 | N | A&S | MS | 76 |
| 38. | 031 | 20-25 | N | CHE. | BS | 70 |
| 39. | 015 | 25-30 | N | MET.E. | MS | 74 |
| 40. | 036 | 25-30 | N | ENG. | MS | 71 |

[1]Data available only to the nearest year.

[2]Exact age not available.

[3]Veteran Status: N is a non-veteran, V is a veteran.

[4]Major abbreviations: See Appendix A, Question 8.

## SUMMARIZATION OF MANAGEMENT PERCEPTIONS OBTAINED ON FIELD TRIP

One of the four objectives of this thesis is to compare the perceptions of the Professional Engineer with those of his management. The questionnaires completed by forty COMMOG Engineers have provided the vehicle necessary to quantify their perceptions. In order to capture the management views, seventeen engineering supervisors agreed to be interviewed. The sample consisted of 11 department chiefs (1st level), 4 assistant managers (2nd level), 1 manager (3rd level), and 1 engineering director (4th level). The procedure used was to give each person to be interviewed a copy of the questionnaire that was completed by the engineers well in advance of the appointed meeting time. It was requested that the questionnaire be completed using their perceptions of the Engineering Retention System. After this was accomplished, a personal interview a minimum of one hour in length was held using the completed questionnaire as the focal point of the discussion. The perceptions obtained through this analysis are discussed below. The sequence of the following information matches the basic format of the questionnaire shown in Appendix A.

The career goals for the Management group were analyzed and the composite rank order is as follows:

1. Management Competence
2. Meaningful Contribution
3. Improved Income
4. Job Security
5. Creativity
6. Technical Competence

When forming the composite, Management Competence was clearly at the top. Meaningful Contribution and Improved Income could be interchanged in order. Job Security placed fourth but had a spread of second to eighth.

The managers were also asked to rank order the factors in the Engineering Retention System. The rank ordered concensus result is as follows:

1. Performance
2. Technical Competence
3. Critical Skill
4. Seniority
5. Current Assignment

The list was truncated at 5 because a significant number of Engineering Managers did not care to list more than 5 factors.

The Managers also provided their perception of an Ideal Retention System. It is interesting to note that the Ideal is identical to the Actual shown above.

The supervisory staff perceives themselves to be conversant with the retention system. As far as job security is concerned they view

COMMOG to be about the same as Government on this count with six judging "About The Same," five "Somewhat Lower" and five "Somewhat Higher." The Equity of the retention system was overwhelmingly rated "good." They felt that the cutbacks were caused by softening business conditions and that management was responsible.

The large majority of Managers felt that the COMMOG retention system provided a reasonable balance between organizational performance and personal protection.

The sample was absolutely split on the question of Uniformity of Application across the various groups of the organization with half the group answering in the affirmative and half the group answering in the negative.

Management agreed that the published retention procedures were followed with a few major exceptions.

Virtually all felt that Management Intervention to protect personnel in key jobs or performing key functions was warranted and indeed desirable from a corporate productivity standpoint.

Almost 80% of the sample felt that their perception of the present retention system was the same as their superiors and their subordinates. However, they did add that there was a closer match between various levels of supervision than there was between supervision and the professional engineer. They mentioned, however, that the slight difference in perception posed no serious problem.

Eighty percent of the Supervisory group also felt that the performance appraisals are generally accurate. The reason given for this perception was the multi-supervisory and challenge aspects of the Appraisal Plan.

Virtually all of the sample were of the opinion that most promotions to supervision or higher levels of engineering were deserved.

Fifteen of seventeen felt that the organization gave timely notice of pending adverse personnel actions. The reason for this uniform opinion was given to be monthly group discussions with the Factory General Manager.

On the question of communication between employer and employee, the group split into two camps. Half the sample were of the opinion that communication was Unilateral and Formal, but Informative whereas the other half viewed it to be Bilateral and Formal, but Informative.

The group consensus was that there was a considerable impact on Morale of the personnel and Near Term Productivity if a long time elapses between the initial personnel reduction announcement and the ultimate layoff. It was felt, however, that there was little effect on Long Term Productivity. On the same question, no conclusions could be drawn on decisions to Quit, Transfer, or Retire Early because of long time lapses as the scores in these areas ran uniformly from "None" to "Considerable."

No clear consensus could be drawn as to the group's feeling on Minority Group Impact. Ten of the Sample felt that personnel reductions did not have a greater impact on Minority Groups whereas seven felt that it did. When asked if personnel reductions had more of an impact on Women and Older Employees, the group split in the same way as they did on the minority question. However, virtually all of the managers were of the opinion that Higher Salaried people were not affected by personnel reductions. It must be mentioned however, that the written responses to the "Minority," "Women," and "Older Employee" questions indicated that the group chose to consider other than the professional Engineering group in their response.

Finally, there was Unanimous agreement that Seniority should equal the total amount of time spent in all organizations.

The following are some miscellaneous comments provided by the management sample concerning possible improvements to the COMMOG existing retention system:

1. More consideration to organizational needs.

2. Older people are being "squeezed."

3. A weighting should be provided for the various engineering jobs--not all professional tours are equal.

4. Rotate engineers in order to balance skills.

5. Reduce Senior Engineers, Occupational Engineers, and Engineering Associates proportionately.

6. Improve the performance system.

7. It is critical that the retention system be applied uniformly.

8. Do a better job of promulgating the rules.

9. Develop more financial measurements in order to better implement the retention system.

10. Improve the input data (take more time in decision making).

11. Generally on target.

12. Don't change (afraid of more rules).

The above perceptions are presented in a very brief format and are provided for general background only. This management information was used, where appropriate, in an expanded form in the body of the thesis.

# APPENDIX F

## AEROG PHASE TWO

Table F-1. Aerospace Industry Engineering Sample Used for the Questionnaire

Contents

TABLE F-1

AEROSPACE INDUSTRY ENGINEERING SAMPLE FOR THE QUESTIONNAIRE

| Approx. Seniority[1] | Employee No. | Age Range[2] | Vet. Status[3] | Education: Major[4] | Education: Highest Degree | Education: Year | Some Grad. |
|---|---|---|---|---|---|---|---|
| 1. | 071 | over 60 | V | ENG. | BS | 37 | x |
| 2. | 064 | 55-60 | V | CHE. | BS | 40 | |
| 3. | 070 | 40-45 | V | - | HSD | 48 | |
| 4. | 079 | 50-55 | V | M.E. | BS | 50 | x |
| 5. | 056 | 50-55 | V | M.E. | BS | 50 | |
| 6. | 049 | 50-55 | V | E.E. | BS | 50 | |
| 7. | 053 | 50-55 | V | M.E. | BS | 48 | |
| 8. | 047 | 40-45 | N | E.E. | BS | 54 | |
| 9. | 048 | 55-60 | V | - | HSD | 36 | |
| 10. | 068 | 40-45 | V | - | HSD | 50 | |
| 11. | 054 | 40-45 | V | M.E. | BS | 73 | |
| 12. | 045 | 35-40 | V | M.E. | BS | 68 | |
| 13. | 059 | 40-45 | N | - | HSD | 50 | |
| 14. | 069 | 45-50 | V | M.E. | BS | 56 | |
| 15. | 078 | 40-45 | V | MULT. | BS | 57 | x |
| 16. | 074 | 45-50 | V | BA. | MB | 72 | |
| 17. | 041 | 40-45 | V | E.E. | BS | 58 | |
| 18. | 050 | 40-45 | V | M.E. | BS | 59 | |
| 19. | 063 | 40-45 | V | E.E. | MS | 75 | |
| 20. | 058 | 35-40 | N | A.E. | BS | 58 | |
| 21. | 077 | over 60 | N | M.E. | MS | 62 | |
| 22. | 061 | 45-50 | V | MULT. | BS | 60 | |
| 23. | 051 | 40-45 | V | A.E. | MS | 68 | |
| 24. | 052 | 45-50 | N | - | HSD | 45 | |
| 25. | 062 | 35-40 | V | M.E. | MS | 66 | |
| 26. | 055 | 35-40 | N | E.E. | BS | 62 | |
| 27. | 057 | 50-55 | V | E.E. | BS | 50 | |
| 28. | 080 | 40-45 | V | PHY. | BS | 61 | |
| 29. | 065 | 40-45 | V | E.E. | BS | 64 | |
| 30. | 042 | 30-35 | V | E.E. | BS | 74 | |

TABLE F-1 (Continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| 31. | 043 | 30-35 | V | E.E. | BS | 74 |
| 32. | 066 | 30-35 | N | A.E. | BS | 67 |
| 33. | 075 | 30-35 | N | M.E. | MS | 73 |
| 34. | 044 | 30-35 | D | BA | MB | 74 |
| 35. | 072 | 25-30 | D | A.E. | BS | 69 |
| 36. | 076 | 20-25 | N | E.E. | BS | 73 |
| 37. | 046 | 25-30 | N | MATH | BS | 72 |
| 38. | 060 | 25-30 | N | MATH | BS | 74 |
| 39. | 073 | 20-25 | N | E.E. | BS | 73 |
| 40. | 067 | 20-25 | N | E.E. | MS | 77 |

[1]Data available only to the nearest year.

[2]Exact age not available.

[3]Veteran Status: N is a non-veteran, V is a veteran, D disabled veteran.

[4]Major abbreviations: See Appendix A, Question 8.

# SUMMARIZATION OF MANAGEMENT PERCEPTIONS OBTAINED ON FIELD TRIP

A total of fourteen (14) AEROG managers were interviewed orally following the same general outline as that depicted in the questionnaire completed by the sample of 40 AEROG engineers. Interviews were conducted with both engineering managers and personnel managers and each field included four levels of managers starting with first-level supervisors and working up the chain of responsibility. Some managers elected not to answer every question (usually because they doubted their personal qualifications in a specific area) in these instances such answers were counted as "non-answer" and the denominator of the sample was adjusted downward in the appropriate fashion this was done on a question-by-question basis.

The age range of the AEROG managers was from 34 to 61 with an average of 46.6; the comparable range from AEROG engineers was 23 to 61 with an average of 46.9. As might be expected, the managers evidenced a higher degree of familiarity with the AEROG retention system than did the surveyed engineers. But in virtually all other areas of questioning, their views were essentially identical to those of the engineering work force. In the interesting area of present and ideal retention criteria, there was relatively high correlation between the managers and engineers as seen from the following table:

| Rank Order | Present Retention System Criteria | | Ideal Retention System Criteria | |
|---|---|---|---|---|
| | Management | Engineers | Management | Engineers |
| 1. | Performance | Performance | Performance | Performance |
| 2. | Technical Competence | Technical Competence | Technical Competence | Technical Competence |
| 3. | Critical Skill | Critical Skill | Critical Skill | Critical Skill |
| 4. | Current Assignment | Politics | Current Assignment | Seniority |
| 5. | Seniority | Tenure with Organization | Seniority | Tenure with Organization |

The management group was asked to list what they felt were the engineers' career goals; a comparison of this perception with the results from the engineering survey is shown below:

CAREER GOALS

| Rank Order | For Engineers as Perceived by Management | For Engineers as Reported by Engineers |
|---|---|---|
| 1. | Technical Competence | Improved Income |
| 2. | Meaningful Contribution | Meaningful Contribution |
| 3. | Improved Income | Job Security |
| 4. | Job Security | Technical Competence |
| 5. | Creativity | Creativity |

It would appear that managers see engineers as being somewhat altruistic with respect to career goals based on the positioning of "technical competence" and "improved income" on the two groups' lists. This perception on the part of management may in fact be a form of tribute to the engineers and their ability to project or communicate a desired image to management.

In the communications area, managers were almost unanimously of the opinion that communications between themselves and the engineering population were effective but they were evenly divided as to whether these communications were bilateral or unilateral in nature.

The management groups' answers to the general equity questions (those 7 or 8 questions that attempted to ascertain how equitable the retention system was in practice) indicated in almost every case that managers believe the AEROG retention system to be fair to the engineering work force. The one general equity question that drew a mixed reaction was: "Do you feel that your retention system is applied uniformly across the various groups of the organizations?" The responses included seven "yes's" and seven "no's" and the amplifying remarks tended to center around favoritism, cronyism, and politics. It should be noted that "politics" did not appear on the managers' listing of present retention system criteria.

When dealing with specific equity questions, those questions that were intended to probe discrimination based on age, sex, race, and/or salary the management group was less decisive in their collected opinion(s). This lack of a decided majority position may be due in part to the questions themselves, which in retrospect, we feel were not concise enough in nature. As mentioned above, the AEROG management sample was comprised of people from the engineering and personnel functional areas. This sub-classification of the managers inadvertently provided a very interesting result in that the personnel managers were of one accord that it was AEROG's desire to satisfy the intent of the several applicable anti-discrimination laws. The engineering managers, almost to the man, indicated that they were aware of the anti-discrimination legislation, and they thought AEROG would and should comply with these laws but if they, as individuals, had their way they would treat all employees as though they were uni-sexed, uni-aged, and purple.

In interviewing the management group three other points came across as almost universal expressions:

1. Do not be in a hurry to change the existing retention systems just for the sake of change; it has undergone several changes in the past few years and is just now becoming somewhat stable, understandable, and accepted.

2. The process of assigning retainability ratings is subjective by its very nature and no mechanistic system can ever be perfect but, in many instances a rating that has its genesis in a numerical-oriented system is more palatable to the receiver and the giver (an employee is more comfortable with a poor rating that comes from a system rather than his supervisor).

3. The feature most appreicated in the AEROG system, by the managers, is the judgemental element as typified by the fact that each individual's rating is determined by a panel of supervisors operating in a consensus mode.

AEROG managers were very willing to participate in the interview and were quite candid in their responses and comments. They indicated a high degree of interest in the subject of the interview and indicated a desire to see the retention system improved; additionally, there was no outward evidence of any manager answering questions based on Theory X assumptions relative to the behavior of the AEROG engineering work force!

# APPENDIX G

## GOVTG PHASE TWO



## Contents

TABLE G-1

GOVERNMENT AGENCY ENGINEERING SAMPLE FOR THE QUESTIONNAIRE

| Approx. Seniority[1] | Employee No. | Age Range[2] | Vet. Status[3] | Education: Major[4] | Education: Highest Degree | Education: Year | Some Grad. |
|---|---|---|---|---|---|---|---|
| 1. | 081 | over 60 | V | CHE. | BS | 34 | x |
| 2. | 089 | 50-55 | V | - | HSD | 41 | |
| 3. | 082 | 55-60 | V | M.E. | BS | 49 | |
| 4. | 097 | 45-50 | V | A&S | BA | 56 | |
| 5. | 088 | 50-55 | V | - | HSD | 40 | |
| 6. | 093 | 45-50 | V | E.E. | BS | 50 | |
| 7. | 095 | 45-50 | V | B.A. | MA | 76 | |
| 8. | 105 | 50-55 | V | ENG. | BS | 51 | |
| 9. | 087 | 50-55 | V | I.E. | BS | 47 | x |
| 10. | 096 | 45-50 | V | M.E. | BS | 50 | x |
| 11. | 098 | 45-50 | V | ENG. | BS | 64 | |
| 12. | 104 | 40-45 | V | MULT. | MS | 75 | |
| 13. | 090 | 50-55 | V | E.E. | MS | 51 | |
| 14. | 108 | 40-45 | V | MATH | BS | 58 | |
| 15. | 091 | 40-45 | N | E.E. | BS | 53 | |
| 16. | 101 | 45-50 | V | E.E. | BS | 59 | |
| 17. | 106 | 40-45 | V | E.E. | BS | 57 | |
| 18. | 094 | 45-50 | V | PHY. | BS | 50 | |
| 19. | 109 | 40-45 | V | MET.E. | MS | 57 | |
| 20. | 112 | 40-45 | V | A.E. | BS | 61 | |
| 21. | 083 | 55-60 | N | CHE. | MS | 42 | |
| 22. | 099 | 45-50 | V | M.E. | MS | 60 | |
| 23. | 100 | 45-50 | N | M.E. | BS | 51 | |
| 24. | 103 | 50-55 | V | M.E. | BS | 56 | |
| 25. | 114 | 40-45 | V | E.E. | BS | 60 | |
| 26. | 117 | 35-40 | N | PHY. | BS | 61 | |
| 27. | 118 | 35-40 | N | M.E. | BS | 60 | |
| 28. | 085 | 55-60 | D | E.E. | BS | 40 | x |
| 29. | 092 | 50-56 | V | STRE. | BS | 49 | |
| 30. | 113 | 40-45 | V | B.A. | MA | 75 | |

TABLE G-1 (Continued)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 31. | 111 | 40-45 | V | E.E. | BS | 63 | x |
| 32. | 086 | 55-60 | V | E.E. | BS | 57 | x |
| 33. | 110 | 40-45 | V | MATH | BS | 59 | x |
| 34. | 115 | 35-40 | V | CIV.E. | BS | 59 | |
| 35. | 120 | 35-40 | N | MATH | BS | 67 | x |
| 36. | 084 | 55-60 | V | M.E. | BS | 48 | x |
| 37. | 102 | 45-50 | V | E.E. | BS | 58 | x |
| 38. | 107 | 40-45 | V | M.E. | BS | 60 | x |
| 39. | 119 | 30-35 | V | MATH | MS | 73 | |
| 40. | 116 | 35-40 | V | E.E. | BS | 62 | |

[1] Data available only to the nearest year.

[2] Exact age not available.

[3] Veteran Status: N is a non-veteran, V is a veteran, D disabled veteran.

[4] Major abbreviations: See Appendix A, Question 8.

G. <u>GOVTG Phase Two</u>

1. General

Table G-1 shows the key demographics for the 40 engineers randomly selected to complete the Engineering Questionnaire in the Government Agency. The balance of this Appendix contains, to a large extent, the flavor of the responses in the open-ended "Why" questions and some of the recommendations and conclusions drawn by both managers and engineers. The Government Personnel Retention System is a composite of legislation enacted in the last 93 years, some of it with conflicting intent, and all interpreted a la Torah by the Civil Service Commission Regulations and Manuals. Many of the shortcomings of the system are becoming more obvious only now.[1] Many of the engineers' (and managers') comments on the questionnaire addressed areas of dissatisfaction with and suggestions for improvement of the Government Retention System: These areas include:

a. Veteran's Preference as a retention criteria,

b. Management Intervention into personnel retention for organizational viability,

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[1]The Veteran's Preference characteristic, for example, was seen to have little effect until recently because the economy has generally been on the increase and the Federal employment was increasing. With an uncertain economy and general cutbacks in Government Employees the flow is no longer inward. Furthermore the large influx of World War II, Korea, and Vietnam Veterans into civil service had the majority of the employees competing against each other, now there are decreasing percentages of veterans and the preference results are more pronounced.

c. Discrimination, including racial minorities, women, higher salaried, and older employees, and

d. Performance measurement accuracy improvement.

e. Qualifications for transitioning

f. Finally, it has been said that the system works because good managers make it work. A number of comments were made on this subject, and some of the methods "employed" to salvage a viable organization from an antiquated retention procedure are discussed as circumvention techniques.

2. Veteran's Preference

a. The Pecking Order - One of the major differences in the Government retention system with respect to Industry is the use of veterans' status as a criteria for retention. A preference for retaining veterans is implemented by subdividing Competitive Levels into strata whereby veterans may "bump" non-veterans, but non-veterans may only "bump" other non-veterans or lower-level veterans. This is generally perceived to cause depletion of the non-veteran population in a disproportionate amount. The thesis data analysis verifies this perception. Table G-2 summarizes key veteran/non-veteran comparisons. Only six engineers (15%) in the 40 engineer questionnaire sample, and 23 (23%) in the 100 engineer sample used for the example reduction in force were non-veterans. Furthermore, of the 25 people laid off in the example RIF, 52% were non-veterans! In the questionnaire, only 23.3% of the veterans had been affected by a

TABLE G-2

GOVERNMENT VETERAN/NON-VETERAN RESULTS
(IN PERCENT)

| | Veterans | Non-Veterans |
|---|---|---|
| Equity | | |
| Poor | 36.4 | - |
| Marginal | 18.2 | 66.7 |
| Fair | 27.3 | 33.3 |
| Good | 9.1 | - |
| Excellent | 9.1 | - |
| Job Security | | |
| Much Lower | 9.1 | 16.7 |
| Somewhat Lower | 54.5 | 66.7 |
| Somewhat Higher | - | 16.7 |
| Much Higher | 36.4 | - |
| Balance Performance with Personnel | | |
| Yes | 24.1 | 25.0 |
| No | 75.9 | 75.0 |
| Management Intervention Warranted | | |
| Yes | 67.6 | 100.0 |
| No | 32.4 | - |
| Performance Awards Deserved | | |
| None | 8.8 | - |
| A Few | 20.6 | 16.7 |
| Some | 44.1 | 33.3 |
| Most | 26.5 | 50.0 |

previous adverse action, but the figure was 33.3% for the non-veterans.

b. Gratitude Overdone - O. Glenn Stahl[2] has said, "Every nation has the problem of what to do with its creditors--those who risk life and limb in its service. The answer has usually been granting of gratuity or pension, or granting a job (public service opened to the veteran on a preferred basis). Thus a dilemma is addressed--good administration demands restriction to the most fitted (the best qualified personnel) for the work, but humanitarian and political considerations persuade providing suitable occupations for these citizens." The Veterans Preference Act of 1944 related preference to wartime or national emergency service. "It is clear that in its enthusiasm to guarantee preference for veterans the Congress went well beyond basic preference policy and legislated personnel employment procedures to a degree of detail unparalleled anywhere else in the world."[3] The Readjustment Benefits Act of 1966 extended this preference to peacetime veterans with 6 months or more service. "How such a policy can be justified on the grounds of reward for sacrifice or risk taking is a mystery."[4]

c. Perceived Effect - When the preferential hiring is coupled with the Civil Service Act of 1883 and the Lloyd-La Follette Act of 1912 (which are aimed at preventing civil servant removal for

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[2] O. Glenn Stahl, Public Personnel Administration, 6th Edition, Harper and Row, 1971.

[3] Ibid.

[4] Ibid.

reasons other than incompetence or misconduct), real problems of equity, motivation and expertise maintenance occur.

(1) In terms of equity, 54.6% of the veterans and 66.7% of the non-veterans sampled list the retention system's equity as marginal or poor. Furthermore 83.4% of the non-veterans perceive themselves as having somewhat lower or much lower job security than their industry counterparts (63.6% of the veterans felt that way also).

(2) Human motivation is largely an emotional state influenced by the environment in which one works. (The Economic Man Model which related action to monetary rewards has now been expanded to encompass conformal and aspirational pressures as well.) Opportunity for advancement and security of tenure are threatened during time of retrenchment, and ample evidence exists that motivation (and productivity) suffer in times of retrenchment.

(3) Finally, where performance and technical competence are accorded low relative priority in determining those personnel selected for retention, expertise maintenance is a "by chance" operation. The questionnaire attempted to ascertain the engineer's perception of how well the retention system balanced the organization performance (expertise maintenance) function with the protection of personnel (humanistic) function. Both veterans and non-veterans indicated no by a ratio of 3 to 1. Most of the comment as to why, discussed the emphasis of personnel procedures at the expense of organizational health. (A sizeable number of these alluded to personnel protection through politics.)

d. Proposals - A number of recommendations were made by the engineers in the "improvements to your retention system question" (#54) which addressed veteran's preference. Five engineers (three of which are veterans) recommended the reduction of priority or deletion of military service credit as a retention factor. Three engineers suggested a plan whereby time in military service would be included in seniority but that the Tenure subgroup divisions (e.g., IA, IB) be merged. All but five of the 15 managers polled, suggested changes to veterans' preference. They ranged from elimination, through addition of military service to seniority, to devising a decreasing-importance point system for retention.

e. Summary - It is fairly obvious that both the engineers and management sampled view veterans preference as a retention criteria as a discriminatory practice which is detrimental to productivity and motivation in the government service.

3. Management Intervention

a. Excepted Employees - There are several classes of exceptions to the reduction-in-force proceedings in a particular competitive area. For example retention priority is temporarily afforded newly-hired military, personnel in the intern (training) programs are excluded to a maximum practical extent, and higher grade management (GS-16, 17, 18 or Public Law 313 employees) are affected only when prior, written approval is obtained of the Secretary of the Agency. But the exception which provides the most problem is continuing retention. An employee whose name falls below the retention point (Red line) may be indefinitely retained if he is engaged in necessary duties which cannot be taken over within 90 days (the so-called minimum qualification training period) without causing undue interruption to the activity. Continuing retention is intended to be used only in cases where failure to do so would materially impair the operation of an installation. The major problem is concisely stated by Professor C.A. Myers "Management is too often influenced by personal acquaintance, favors performed and recent events. No objective record or systematic subjective employment appraisal is used."[5]

b. Results and Suggestions - The government veterans and non-veterans in the questionnaire sample both see management intervention as warranted (Table 21 ) to maintain organizational viability but the non-veterans are unanimous! Since the composite sample answer to that question was 80.8% in the affirmative, the government veterans appear less inclined and the non-veterans more inclined to agree with continuing retention. In the open-ended "improvements to the system" question there were more recommendations (15) by engineers on the subject of management intervention than any other topic. The primary suggestion was to eliminate politics in the retention process. Several suggested that management be more open about naming and justifying the critical skills and key positions early

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[5] Paul Pigors and Charles A. Myers, Personnel Administration-- A Point of View And A Method, 6th Edition, McGraw-Hill, 1969.

in the procedure, and then isolate themselves from mechanical process of the RIF (allow the Civilian Personnel Office to "run it by the book"). Several suggested that the intervention would not be necessary if management were allowed the ability to "get rid of poor performers." On the other hand government managers feel that they need to be allowed the latitude to make their own personnel decisions, since they are responsible for perfoming the organization's missions. One suggested that the so-called "minimum qualifications" for transitioning jobs, which determines an employee's ability to match a job function, be determined by first level management, "not some personnel clerk on the basis of key words in a job description." Another suggested establishing a board of peers who reviewed each vacancy for applicable bump or transition qualifications (satisfactory, not minimum). Three of the eight comments dealt with making it easier for management to discharge for cause, which, as the engineers agreed, would minimize the need for management intervention.

4. Minority Discrimination

a. Federal Statutes as a Base - The Civil Service Act of 1883[6] addressed the principle of "merit employment" and outlawed religious discrimination in federal employment. In 1940, racial discrimination was forbidden in a Civil Service rule (Executive Order 8587, 5 Fed. Reg. 445, 1940). The philosophy of "equal rights for all"

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[6]The Pendleton Act, 22 Stat, 403, 1883, 5 U.S.C. Ch. 12, 1958, U.S. Civil Service Commission, Rule VIII, 1883.

in classified federal employment was established when Congress adopted the Ranspeck Act, 54 Stat. 1211, 1940, Title I, 5 U.S.C. Section 631a, 1958, which extended the coverage of the Civil Service Act and amended the Classification Act of 1923. The Equal Pay Act of 1963 amended the Fair Labor Standards Act of 1938 to include sex discrimination. Then Executive Order 11141 issued in February 1964 declared that government contractors and subcontractors were to observe a policy against discrimination based on age. Title VII of the Civil Rights Act of 1964 addressed the unlawfulness discriminating in the hiring, discharging of employees "on the basis of race, color, religion, sex or national origin." Probably the most significant impact of this period was Executive Order 11246 issued in September 1965 which requires a "written affirmative action compliance program for each of its (a contractor's) establishments."[7] The Equal Employment Opportunity Act of 1972 added enforcement powers to the Equal Employment Opportunity Commission.

b. The questions 31 through 34 in the Engineering Questionnaire were intended to assess possible conflict of interests between retention system criteria and affirmative action plan goals (as well as age discrimination goals, opportunities for women, and salary considerations, such as average maintenance). Instead the answers tended to externalize the problems. The answers are important,

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[7] Sandra G. LeFlore, Racial Discrimination in Employment, An Overview of the Legislative, Judicial, and Administrative History 1865-1975, Unpublished Term Paper, Summer, 1975.

however, in that they present a rationalized viewpoint that could be described as a trend.

(1) Minority Impact (EEO) - Only 10% of the GOVTG engineers and 53.3% of the managers sampled felt there was more impact for minorities in a personnel reduction than for other employees. The main reasons given were that minorities are generally more recent employees with less seniority and generally non-veteran status (this could not be verified because of the lack of minority employees in the sample). 72.5% of the engineers shared the opposite opinion and reasoned that they were being effected less due to management intervention and the minority employment goals "established by the courts and resulting from minority pressure." One high level manager suggested that the present EEOC and Federal Civil Service statutes are contradictory and one should be repealed.

(2) Impact on Women (LIB) - Of all the questions in the Engineering Questionnaire, this one was the most misused in terms of answering the wrong question. As a matter of fact about 45% of the GOVTG engineering sample answers were discounted because they externalized the answers (e.g. "no because she is not normally the head of the household" was a common response, as were frequent references to stratification into "non-productive" clerical jobs where they compete on equal terms). Of the remaining 55%, however, 45% answered that women weren't impacted in a RIF out of proportion to others because they are normally in "short supply" and an abundance of jobs helps. Sixty percent of the managers felt that

they were discriminated against because of the seniority and veterans preference retention criteria. One indicated they were in a sense protected because their lower GS grades were needed to keep down the organization's average grade structures.

(3) Higher Salaried Employees - The management (all higher-salaried employees) indicated 80% agreement that higher-paid employees were not disproportionately impacted. Of the valid answers 69% of the engineers agreed. Principal reasons given included a close perceived correlation between age, seniority, veteran's preference, and salary. 42.5% of the engineers again externalized, to a large extent by indicating a higher impact because of: the difficulty in getting similar pay elsewhere and the increased financial burdens being borne during that stage in life, etc.

(4) Older Employees - The <u>entire</u> GOVTG management sample agreed there was no age discrimination in the government retention system for the reason stated above. Of the engineers 60% agreed. A number expressed some bitterness at being assigned "less challenging jobs with concomitant loss of prestige, encouraged to retire early or being kept from continuing their career training." Again about 37% externalized the question. Such answers as: reemployment is much more difficult and generally at lower grades or rates, family and geographical resettlement are more traumatic, were prevalent.

5. Transitioning

The practice of placing more senior employees in other competitive level jobs for which they "minimally qualify" was the subject of many strong management (60%) and engineering comments.

a. Less CPO Involvement - A major thread was that the "minimum qualifications" for transitioning are determined and administered by the Civilian Personnel Office (CPO), who (a) are not familiar enough with the employees or their capabilities, (b) do not have the expertise to assess personnel qualifications for a job, and (c) are therefore forced to accomplish the process by "matching key words and phrases on inflated job descriptions." The suggestion was to have first level management perform the function <u>before</u> the retrenchment begins.

b. Fewer Competitive Levels - Another consideration was to reduce the number of different Competitive Levels so that transitioning would be facilitated on the basis that "most competent engineers can do each other's jobs with a minimum break-in period."

6. Performance Measurements System Improvements

a. Description - The civil service merit system requires an annual review of each employee's performance and potential. The ratings are formally provided in order that:

(1) A permanent record of the supervisor's appraisal of his employee be made,

(2) The employee be advised of his standing as perceived by management,

(3) Career development and training requirements are defined, and

(4) Management may have a guide for possible promotion, demotion, or transfer.[8]

The intent is to rate the employee's potential based on past performance on a scale of 4: Outstanding, 3: Above Average, 2: Average, 1: Marginal, and 0: Unsatisfactory. Such characteristics and skill requirements as Technical Competence, Quantity and Timeliness of Work, Written and Oral Communication Facility, Cooperation, Stability, and Supervision and Administration are addressed.

b. Accuracy - There is no accurate measurement of performance because the Employee Career Appraisals, like the Army Officer's Efficiency Reports, are consistently overstated. There is no distribution of "goods and bads" to be matched, but the scale of measurement implies it. The rating exercise becomes meaningless because:

(1) The manager takes the easy way, rather than face the distasteful task of pointing out faults and poor performance (which require considerable documentation, justification, and possible complicated appeal procedures.

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[8] C.D. Smith, Motivation of Civil Servants in a Retrenchment Environment, Unpublished Operational Psychology Term Paper, MIT Sloan School, Fall 1975.

(2) the ratings are a basis for retention, promotion, and other personnel and career issues. (The unblemished record is at a premium.)

c. Questionnaire Suggestions - The engineer's and manager's comments in Question 54 (Appendix A) with regard to performance measurement are particularly informative. One engineer suggested that each employee be rated on his technical competence, performance, and critical skill and that an overall "retention score" be determined and used in a RIF much the same way as the Aerospace retention system uses their ratings. Another suggested a "contract approach," where employees bid for the available jobs and an independent board screen the top 3-5 people. The management suggested several alternatives or modifications to the performance measurement system:

(1) Developing and maintaining a massive personnel data base which three managers (on a rotational basis) can review previous experience, career appraisals, and supervisor's comments for objectivity and proper ranking on a uniform basis,

(2) Employing a points system which weighs performance seniority, military service credit, and other factors into a retainability index,

(3) Requiring the managers who make the measurements to achieve uniformity through negotiation with each other on a preestablished group performance distribution.

7. Comments on Circumvention Techniques

In answering yes/no questions, the engineers were asked to justify their answers. Many of these answers dealt with the subject of distrust, and perceived dishonesty on the part of management in attempting to circumvent the retention system. The preceding management intervention discussion relates to this issue, but there are a series of four more concrete and mechanical examples frequently cited, which need the light of day.

a. Competitive Areas - The determination of what constituted a competitive area was felt, by the six engineers and two managers who commented on it, to be arbitrary and that they should be broadened (reduced in number) to encompass an entire commuting area. The small divisions have the effect of protecting those in a growing program.

b. Competitive Levels (C.L.'s) - The second most prevalent comment by the engineers on improvements to the retention system was a reversal of the trend to proliferate competitive levels (four of the managers agreed). When the number of special job classifications approaches the number of employees (as in the case of the raw data received for the example RIF-76 C.L.'s for 100 engineers), the bumping process is essentially circumvented. Whether the employee is more secure or not is a function of whether his job is abolished, and how qualified he and his peers are for transitioning to each other's jobs. Most of the twelve comments on improvement of the retention system which related to competitive levels suggested reducing the number of different C.L.'s by broadening the skill and background requirements. One suggested equating C.L.'s to engineer's series (Electrical, Mbchanical).

c. Job Descriptions - Closely related to the proliferation of C.L.'s is an indictment of the job description procedures by three engineers. They maintain that more and more overstatement is included in their job descriptions to support C.L. proliferation. The three managers who addressed the issue wanted to combine similar job descriptions, make them more general, and thereby decrease the number of competitive levels.

d. Outstanding Performance Awards - Five engineers commented on the use of Outstanding Performance Awards (which can increase seniority by four years if current) as a means of protecting vulnerable employees. They suggest elimination altogether, or use of an independent, unbiased panel to review each case on its merits. Table 19 contains a comparison of veteran and non-veteran opinion on how many such awards are merited. The veterans are more doubtful than the non-veterans (who stand to gain).

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